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ABSTRACT

This report presents data in tabulated form. The survey covered all such institutions in the country known or believed to have allocated at least $100,000 to intramural R&D performance, and contains data on scientists, engineers, and technicians employed, and on current and capital expenditures associated with the conduct of research and development. Summary data, classified by type and size of organization and by state, are presented. Highlights in the report show: (1) independent nonprofit institutions employed over 26,000 scientists and engineers in October 1973, and 88 percent of these were primarily engaged in research and development; (2) R&D expenditures of independent nonprofit institutions during 1973 totaled $1,006 million, with the Federal Government being the source of 69 percent of the funds; (3) of the total R&D expenditure, the largest amount was allocated to the life sciences--37 percent, engineering for 28 percent, and the social sciences for 14 percent. Technical notes, statistical tables, a reproduction of the covering letter, summary questionnaire, and instructions are presented in the appendices. (Author/EB)

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R&D ACTIVITIES OF INDEPENDENT NONPROFIT INSTITUTIONS, 1973

SURVEYS OF SCIENCE RESOURCES SERIES
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3/4

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FOREWORD

The data presented in these tables summarize the information obtained in the National Science Foundation's survey of R&D activities of independent nonprofit institutions during 1973. The survey covered all such institutions in the country known or believed to have allocated at least $100,000 to intramural R&D performance, and obtained data on scientists, engineers, and technicians employed and on current and capital expenditures associated with the conduct of research and development. Summary data, classified by type and size of organization and by State, are presented in appendix B; additional distributions may be found in the summary questionnaires reprinted in appendix C.

This study is an integral part of the NSF's continuing program of statistical surveys designed to obtain information on the Nation's resources allocated to the advancement of science and technology. Under this program, all major sectors of the economy are studied, including universities and colleges; industrial firms; Federal, State and local governments; and other nonprofit institutions.

The survey was conducted by the Foundation's Division of Science Resources Studies, Dr. Charles E. Falk, Director. The National Science Foundation extends its appreciation to the many officials of nonprofit institutions who contributed time and effort in replying to questionnaires, and without whose help the survey could not have been successfully completed.

H. Guyford Stever
Director
National Science Foundation

April 1975

6

general notes

- Independent nonprofit institutions, as defined for this survey, are legal entities—other than universities and colleges, which are the subject of a separate survey—organized or chartered to serve the public interest and are exempt from most forms of Federal taxation. The survey on which this report is based included nonprofit organizations whose intramural R&D expenditures were known or thought to total $100,000 or more. Surveyed organizations include research institutes, nonprofit-administered Federally Funded Research and Development Centers (FFRDC's), voluntary hospitals, private foundations, professional or technical societies and academies of science, science exhibitors, trade associations and agricultural cooperatives, and other nonprofit organizations, not elsewhere classified (n.e.c.). This report does not include hospitals and science exhibitors operated by State or local governments.
- Statistics shown in this report may not add to totals or subtotals because of rounding.
- For detailed definitions, see instructions in Section C.
- Requests for additional information concerning the survey results should be addressed to J.G. Huckenpahler, Division of Science Resources Studies, National Science Foundation, Washington, D.C. 20550.

acknowledgments

This report was prepared in the R&D Eco
of Science Resources Studies, by J. G. Hucke
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and Nonprofit Institutions Studies Group, wit
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This report was prepared in the R&D Economic Studies Section, Division of Science Resources Studies, by J. G. Huckenpahler. The survey was conducted under the direction of Richard M. Berry, Study Director, Universities and Nonprofit Institutions Studies Group, with special assistance by William L. Stewart, Head of the R&D Economic Studies Section. Statistical assistance was provided by Mrs. Esther F. Gist.

CONTENTS

Page

Highlights vi

Appendixes:

A. Technical Notes 1

B. Statistical Tables 5

C. Reproduction of Covering Letter, Summary Questionnaires, and Instructions 25

D. List of Federally Funded Research and Development Centers Administered by Nonprofit Organizations 72

9

HIGHLIGHTS

- Independent nonprofit institutions employed over 26,000 scientists and engineers in October 1973. Of these, 88 percent were primarily engaged in research and development.

- Research institutes accounted for the largest number of scientists and engineers, 43 percent of the total, and of those primarily engaged in research and development, 47 percent of the total. R&D scientists and engineers ranged from 97 percent in research institutes to 49 percent in societies and academies of science.

- Of the 26,000 scientists and engineers, 38 percent were life scientists; more than one-half of these were employed in hospitals. Engineers made up the second largest field, with 21 percent of the total; another 15 percent were social scientists.

- Scientists and engineers holding Ph.D. or Sc.D. degrees made up 28 percent of the total. Those with an M.D., D.D.S., and other health-professional degrees accounted for another 16 percent; three-fourths of these were employed in hospitals. Scientists and engineers with the master's degree made up 26 percent of the total.

- The 26,000 scientists and engineers were assisted by over 29,000 technicians, 39 percent of whom were primarily engaged in research and development. The proportion so occupied ranged from 96 percent in nonprofit-administered Federally Funded Research and Development Centers (FFRDC's) to 24 percent in voluntary hospitals. Of the 18,000 technicians primarily engaged in other activities—such as administration, science information, and patient care—94 percent were employed in voluntary hospitals.

- R&D expenditures of independent non
totaled $1,006 million. The Federal Gove
cent of the funds, while industrial firms
same amount as was financed by the inst
dollars, the 1973 total represents substan
formance as was reported by independen
NSF survey.

- The federally financed portion of total R
percent in nonprofit-administered FFRD
dations. Industry was the largest source
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so occupied ranged from 96 percent in
ally Funded Research and Development
ent in voluntary hospitals. Of the 18,000
in other activities—such as administra-
atient care—94 percent were employed in

- R&D expenditures of independent nonprofit institutions during 1973 totaled $1,006 million. The Federal Government was the source of 69 percent of the funds, while industrial firms financed 10 percent—about the same amount as was financed by the institutions themselves. In constant dollars, the 1973 total represents substantially the same level of R&D performance as was reported by independent nonprofit institutions in a 1966 NSF survey.

- The federally financed portion of total R&D expenditures ranged from 93 percent in nonprofit-administered FFRDC's to 14 percent in private foundations. Industry was the largest source of funds for R&D expenditures of trade associations and agricultural cooperatives—53 percent of the total.

- Of the total R&D expenditures, the largest amount was allocated to the life sciences—37 percent. Engineering accounted for another 28 percent, and the social sciences for 14 percent.

APPENDIXES:

A. Technical Notes

B. Statistical Tables

C. Reproduction of Covering Letter, Summary Questionnaires, and Instructions

D. List of Federally Funded Research and Development Centers Administered by Nonprofit Organizations

Table A-1. Nonprofit survey universe as of closeout date: October 4, 1974

Region, Division, and State	Total	Research institutes	FFRDC's[1]	Hospitals	Societies & academies	Private foundations	Science exhibitors	Trade associations	Other
UNITED STATES, TOTAL	444	186	7	123	29	15	17	41	26
NORTHEAST	176	73	1	65	7	4	6	7	13
New England	51	20	1	25	1	2	1	—	1
Maine	3	2	—	1	—	—	—	—	—
New Hampshire	—	—	—	—	—	—	—	—	—
Vermont	1	—	—	1	—	—	—	—	—
Massachusetts	38	15	1	18	1	1	1	—	1
Rhode Island	2	—	—	2	—	—	—	—	—
Connecticut	7	3	—	3	—	1	—	—	—
Middle Atlantic	125	53	—	40	6	2	5	7	12
New York	79	37	—	21	4	2	2	4	9
New Jersey	10	6	—	2	—	—	1	—	1
Pennsylvania	36	10	—	17	2	—	2	3	2
NORTH CENTRAL	89	32	—	26	7	3	4	10	7
East North Central	66	18	—	23	6	3	3	10	3
Ohio	20	6	—	10	2	1	—	—	1
Indiana	4	2	—	2	—	—	—	—	—
Illinois	27	2	—	9	4	—	2	9	1
Michigan	11	6	—	2	—	1	1	1	—
Wisconsin	4	2	—	—	—	1	—	—	1
West North Central	23	14	—	3	1	—	1	—	4
Minnesota	9	6	—	1	1	—	—	—	—
Iowa	1	—	—	—	—	—	—	—	1
Missouri	9	6	—	1	—	—	1	—	1
North Dakota	—	—	—	—	—	—	—	—	—
South Dakota	—	—	—	—	—	—	—	—	—
Nebraska	—	—	—	—	—	—	—	—	—
Kansas	4	2	—	1	—	—	—	—	1
SOUTH	99	46	3	9	14	6	1	7	3
South Atlantic	74	33	3	4	13	3	1	14	3
Delaware	1	—	—	—	—	1	—	—	—
Maryland	12	3	—	2	4	—	—	2	1
District of Columbia	40	18	1	1	9	2	—	7	2
Virginia	8	3	2	—	—	—	—	3	—
West Virginia	1	1	—	—	—	—	—	—	—
North Carolina	4	4	—	—	—	—	—	—	—
South Carolina	—	—	—	—	—	—	—	—	—
Georgia	2	1	—	—	—	—	—	1	—
Florida	6	3	—	1	—	—	1	1	—
East South Central	7	4	—	2	—	—	—	1	—
Kentucky	3	3	—	—	—		—	—	—
Tennessee	3	—	—	2	—	—	—	1	—
Alabama	1	1	—	—	—	—	—	—	—
Mississippi	—	—	—	—	—	—	—	—	—
West South Central	18	9	—	3	1	3	—	2	—
Arkansas	—	—	—	—	—	—	—	—	—
Louisiana	4	1	—	1	—	1	—	1	—
Oklahoma	4	2	—	—	1	1	—	—	—
Texas	10	6	—	2	—	1	—	1	—
WEST	80	35	3	23	1	2	6	7	3
Mountain	15	6	—	6	—	1	1	1	—
Montana	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—
Wyoming	—	—	—	—	—	—	—	—	—
Colorado	7	2	—	4	—	—	—	1	—

	79	37	—	21	4	2	2	4	9
New Jersey	10	6	—	2	—	—	1	—	1
Pennsylvania	36	10	—	17	2	—	2	3	2
NORTH CENTRAL	89	32	—	26	7	3	4	10	7
East North Central	66	18	—	23	6	3	3	10	3
Ohio	20	6	—	10	2	1	—	—	1
Indiana	4	2	—	2	—	—	—	—	—
Illinois	27	2	—	9	4	—	2	9	1
Michigan	11	6	—	2	—	1	1	1	—
Wisconsin	4	2	—	—	—	1	—	—	1
West North Central	23	14	—	3	1	—	1	—	4
Minnesota	9	6	—	1	1	—	—	—	
Iowa	1	—	—	—	—	—	—	—	1
Missouri	9	6	—	1	—	—	1	—	1
North Dakota	—	—	—	—	—	—	—	—	—
South Dakota	—	—	—	—	—	—	—	—	—
Nebraska	—	—	—	—	—	—	—	—	—
Kansas	4	2	—	1	—	—	—	—	1
SOUTH	99	46	3	9	14	6	1	7	3
South Atlantic	74	33	3	4	13	3	1	14	3
Delaware	1	—	—	—	—	1	—	—	—
Maryland	12	3	—	2	4	—	—	2	1
District of Columbia	40	18	1	1	9	2	—	7	2
Virginia	8	3	2	—	—	—	—	3	—
West Virginia	1	1	—	—	—	—	—	—	—
North Carolina	4	4	—	—	—	—	—	—	—
South Carolina	—	—	—	—	—	—	—	—	—
Georgia	2	1	—	—	—	—	—	1	—
Florida	6	3	—	1	—	—	1	1	—
East South Central	7	4	—	2	—	—	—	1	—
Kentucky	3	3	—	—	—		—	—	—
Tennessee	3	—	—	2	—	—	—	1	—
Alabama	1	1	—	—	—	—	—	—	—
Mississippi	—	—	—	—	—	—	—	—	—
West South Central	18	9	—	3	1	3	—	2	
Arkansas	—	—	—	—	—	—	—	—	—
Louisiana	4	1	—	1	—	1	—	1	—
Oklahoma	4	2	—	—	1	1	—	—	—
Texas	10	6	—	2	—	1	—	1	—
WEST	80	35	3	23	1	2	6	7	3
Mountain	15	6	—	6	—	1	1	1	—
Montana	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—
Wyoming	—	—	—	—	—	—	—	—	—
Colorado	7	2	—	4	—	—	—	1	—
New Mexico	2	2	—	—	—	—	—	—	—
Arizona	5	2	—	1	—	1	1	—	—
Utah	1	—	—	1	—	—	—	—	—
Nevada	—	—	—	—	—	—	—	—	—
Pacific	65	29	3	17	1	1	5	6	3
Washington	10	3	1	3	—	—	—	1	2
Oregon	8	3	—	2	—	—	2	1	—
California	42	21	2	11	1	1	2	3	1
Alaska	—	—	—	—	—	—	—	—	—
Hawaii	5	2	—	1	—	—	1	1	—

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[1] Federally Funded Research and Development Centers.

APPENDIX A
Technical Notes

Survey Coverage

The 1973 survey of independent nonprofit research organizations obtained data on the financial and manpower resources devoted to research and development in the sciences and engineering. Organizations covered by the survey included research institutes; Federally Funded Research and Development Centers (FFRDC's) administered by nonprofit organizations; voluntary hospitals; professional and technical societies and academies of science; private foundations; science exhibitors; trade associations and agricultural cooperatives; and other nonprofit organizations with R&D programs that could not be classified into any of the above categories. Educational institutions—as well as all organizations owned, operated, or controlled by Federal, State or local governments—were excluded from this report.

Survey questionnaires were mailed in January 1974 to 664 organizations known or believed to have allocated at least $100,000 to the performance of intramural R&D projects. In April and June followup questionnaires were mailed to nonrespondent institutions, and during the month of August, all nonrespondent institutions believed to have allocated $1 million or more of current funds to intramural R&D projects were contacted by telephone. During the course of the data-collection phase of the survey, 220 institutions without intramural R&D programs were deleted from the survey universe. Thus, as of the closeout date of October 4, 1974, the survey universe comprised 444 organizations (table A-1).

Of these 444 organizations, 294 or 66.2 percent, returned usable replies. Estimates for the 150 nonrespondent institutions were based, where possible, on information obtained from earlier surveys in the series, or other information provided by the institutions themselves—such as treasurer's reports, annual reports, brochures, etc. Where these sources were unavailable, estimates were based on grant lists published by various Federal agencies.

Because of the intensive followup procedures employed with the larger institutions, the vast majority of the nonrespondents are institutions within the two smaller size classes. Thus the nonrespondents, while comprising 33.8 percent of the survey universe, are estimated to have accounted for only about 11 percent of the total R&D expenditures, and about the same proportion of all federally funded R&D expenditures (table A-2).

Table A-2. Response rate of inde
institutions, by R&D expenditure

R&D expenditure-size class (thousands of dollars)	Number of institutions	Number responding
Total	444	294
Less than $500	219	119
$500-$999	74	51
$1,000-$4,999	112	89
$5,000 or more	39	35

The basic mailing list for the 1973 survey was co
similar surveys conducted in 1964, 1966, and 1970, a
Organizations known to be controlled by State or lo
reporting intramural R&D expenditures of less tha
Additional organizations were gleaned from the fo

(1) Palmer, Archie M., ed. *Research Centers Di*
Detroit, Mich.: Gale Research Co., 1972.

(2) Fisk, Margaret, ed. *Encyclopedia of Asso*
Organizations of the U.S. (and supplemen
Co., 1972.

(3) Lewis, Marianna O., ed. *The Foundation D*
bia University Press, 1971.

(4) Lists of grants published by Federal agenc

Relationship to Earlier Surveys

The 1973 survey was smaller in coverage tha
similar to that conducted in 1970, in that it concentr
expenditures and on the employment of scientific a
earlier surveys requested information relating to t
of nonprofit organizations, such as intramural and
tific and technical information activities, and educa
the information requested in 1970, however, separa
survey on manpower and financial resources alloca
research and development for use by the National
associations and agricultural cooperatives were in
first time since 1953. The present survey thus repre
types of independent nonprofit institutions have b

nprofit research organizations obtained data on
s devoted to research and development in the
ns covered by the survey included research in-
) and Development Centers (FFRDC's) ad-
voluntary hospitals; professional and technical
rivate foundations; science exhibitors; trade
ives; and other nonprofit organizations with
lassified into any of the above categories.
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procedures employed with the larger in-
respondents are institutions within the two
ndents, while comprising 33.8 percent of the
ccounted for only about 11 percent of the total
roportion of all federally funded R&D expen-

Table A-2. Response rate of independent nonprofit institutions, by R&D expenditure-size class: 1973

R&D expenditure-size class (thousands of dollars)	Number of institutions	Number responding	Percent responding	Percent of total R&D estimated	Percent of federally financed R&D estimated
Total	444	294	66.2	11.1	11.6
Less than $500	219	119	54.3	52.9	47.4
$500-$999	74	51	68.9	33.7	30.6
$1,000-$4,999	112	89	79.5	17.8	16.5
$5,000 or more	39	35	89.7	4.0	7.5

The basic mailing list for the 1973 survey was compiled using the master lists from similar surveys conducted in 1964, 1966, and 1970, and from lists of trade associations. Organizations known to be controlled by State or local governments, as well as those reporting intramural R&D expenditures of less than $75,000 in 1970, were excluded. Additional organizations were gleaned from the following sources:

(1) Palmer, Archie M., ed. *Research Centers Directory*, 4th ed. (and supplements). Detroit, Mich.: Gale Research Co., 1972.

(2) Fisk, Margaret, ed. *Encyclopedia of Associations*, 7th ed., vol. I, *National Organizations of the U.S.* (and supplements). Detroit, Mich.: Gale Research Co., 1972.

(3) Lewis, Marianna O., ed. *The Foundation Directory*, Ed. 4. New York: Columbia University Press, 1971.

(4) Lists of grants published by Federal agencies.

Relationship to Earlier Surveys

The 1973 survey was smaller in coverage than the 1964 and 1966 surveys, but similar to that conducted in 1970, in that it concentrated primarily on intramural R&D expenditures and on the employment of scientific and engineering personnel, whereas earlier surveys requested information relating to the full range of scientific activities of nonprofit organizations, such as intramural and extramural R&D financing, scientific and technical information activities, and education in the sciences. In addition to the information requested in 1970, however, separate data were requested in the 1973 survey on manpower and financial resources allocated to medical and health-related research and development for use by the National Institutes of Health. Also, trade associations and agricultural cooperatives were included in the 1973 survey for the first time since 1953. The present survey thus represents the first time that data on all types of independent nonprofit institutions have been collected simultaneously.

As was the case in the 1970 survey, the present survey covered only those organizations known or believed to have spent $100,000 or more for intramural research and development. By contrast, surveys prior to 1970 attempted to canvass all institutions known to have R&D programs of any size. Although the data presented in this report include estimates for all surveyed nonrespondent organizations, estimates were not made for nonprofit organizations believed to have less than $100,000 in intramural R&D expenditures. On the basis of experience gained in previous NSF surveys, it is estimated that the R&D expenditures of the latter group of organizations comprised less than 1 percent of the total for surveyed institutions.

Limitations of Data

As in previous surveys in the series, the most serious problems were those generated by the lack of a comprehensive mailing list, the dissimilarity among the types of institutions included within the sector, and shifts of institutions, not only into and out of the sector, but among the categories within the sector, as well. An additional problem arose from the complex relationships which exist between institutions within and outside the sector. Various types and degrees of affiliation and cooperation, especially in cases where research institutes maintained close working relationships with universities or hospitals, made it difficult to determine whether a particular organization should be considered independent or not.

No single directory or source document lists every nonprofit organization which performs research and development. Therefore, the mailing list for the survey had to be compiled from previous surveys conducted by the National Science Foundation and the National Institutes of Health, as well as from a number of specialized directories (see Survey Coverage, *supra*.) It is possible that some new organizations—as well as a few older organizations which recently inaugurated R&D programs—may have been overlooked. The number of such organizations, however, with current R&D expenditures of $100,000 or more, is believed to be extremely small.

Finally, variations in accounting procedures as well as different interpretations of concepts and definitions added to the limitations surrounding this survey of research and development. A number of institutions experienced difficulty in distinguishing between intramural and extramural research expenditures, between fields of science in certain multidisciplinary activities, and between "scientists and engineers" and "other personnel."

APPENDIX B
Statistical Tables

SCIENTISTS AND ENGINEERS

B-1. Scientists and engineers employed in independent nonprofit institutions; by type of activity in which primarily engaged, field of science, and highest earned degree: 1965, 1967, 1970, and 1973 6
B-2. Scientists and engineers employed in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and field in which primarily employed: October 1973 6
B-3. Geographic distribution of scientists and engineers employed in independent nonprofit institutions; by field in which primarily employed: October 1973 7
B-4. Scientists and engineers employed in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and highest earned degree: October 1973 8

TOTAL EMPLOYMENT

B-5. Total employment in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and occupational group: October 1973 8
B-6. Geographic distribution of selected manpower characteristics of independent nonprofit institutions: October 1973 9

INTRAMURAL R&D EXPENDITURES

B-7. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds: 1953-1973 10
B-8. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds and field of science: 1964, 1966, 1969, and 1973 10
B-9. Current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and source of funds: 1973 ... 11
B-10. Geographic distribution of current expenditures for intramural research and development in independent nonprofit institutions; by source of funds: 1973 12
B-11. Total and federally financed current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and type of R&D activity: 1973 13
B-12. Current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and field of science: 1973 13
B-13. Geographic distribution of current expenditures for intramural research and development in independent nonprofit institutions; by field of science: 1973 14

FEDERALLY FINANCED INTRAMURAL R&D EXPENDITURES

B-14. Federally financed current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and field of science: 1973 15
B-15. Geographic distribution of federally financed current expenditures for intramural research and development in independent nonprofit institutions; by field of science: 1973 16

TOTAL EXPENDITURES

B-16. Selected financial
pendent nonprofit
institution and R&
1973 ....
B-17. Geographic distribu
characteristics o
institutions: 1973 .

CONCENTRATION OF R

B-18. Selected manpower
of independent non
on the basis of tot
ditures: 1973 .....
B-19. Selected manpower
of independent non
on the basis of feder
expenditures: 1973
B-20. Selected manpower
of independent non
on the basis of tot
engineers employed

INSTITUTIONAL TYPES

B-21. Selected manpower
of science and engin
institutes: 1964-73
B-22. Selected manpower
of science and engin
administered FFRD
B-23. Selected manpower
of science and engin
hospitals: 1964-73
B-24. Selected manpower
of science and engin
nonprofit instituti
1973 ....
B-25. Selected manpower
of science and engi
nonprofit institutio

IX B
bles

en-
of
ield
ree:
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R&D
onal
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INTRAMURAL R&D EXPENDITURES

B-7. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds: 1953-1973 10
B-8. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds and field of science: 1964, 1966, 1969, and 1973 10
B-9. Current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and source of funds: 1973 ... 11
B-10. Geographic distribution of current expenditures for intramural research and development in independent nonprofit institutions; by source of funds: 1973 12
B-11. Total and federally financed current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and type of R&D activity: 1973 13
B-12. Current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and field of science: 1973 13
B-13. Geographic distribution of current expenditures for intramural research and development in independent nonprofit institutions; by field of science: 1973 14

FEDERALLY FINANCED INTRAMURAL R&D EXPENDITURES

B-14. Federally financed current expenditures for intramural research and development in independent nonprofit institutions; by type of institution, R&D expenditure-size class, and field of science: 1973 15
B-15. Geographic distribution of federally financed current expenditures for intramural research and development in independent nonprofit institutions; by field of science: 1973 16

TOTAL EXPENDITURES

B-16. Selected financial characteristics of independent nonprofit institutions; by type of institution and R&D expenditure-size class: 1973 17
B-17. Geographic distribution of selected financial characteristics of independent nonprofit institutions: 1973 18

CONCENTRATION OF R&D ACTIVITIES

B-18. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of total intramural R&D expenditures: 1973 19
B-19. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of federally funded intramural R&D expenditures: 1973 19
B-20. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of total number of scientists and engineers employed: October 1973 19

INSTITUTIONAL TYPES

B-21. Selected manpower and financial characteristics of science and engineering programs of research institutes: 1964-73 20
B-22. Selected manpower and financial characteristics of science and engineering programs of nonprofit-administered FFRDC's: 1964-73 21
B-23. Selected manpower and financial characteristics of science and engineering programs of voluntary hospitals: 1964-73 22
B-24. Selected manpower and financial characteristics of science and engineering programs of all other nonprofit institutions; by institutional type: 1973 23
B-25. Selected manpower and financial characteristics of science and engineering programs of all other nonprofit institutions: 1964-73 24

Table B-1. Scientists and engineers employed in independent nonprofit institutions; by type of activity in which primarily engaged, field of science, and highest earned degree: 1965, 1967, 1970, and 1973

Characteristics	January 1965	January 1967	January 1970	January 1973
Total scientists and engineers	21,936	26,335	24,146	26,336
By type of activity in which primarily engaged:				
Research and development	18,795	22,495	21,806	23,129
Other activities	3,141	3,840	2,340	3,207
By field:				
Engineers	4,765	6,116	5,616	5,546
Physical scientists	3,115	3,691	3,266	3,108
Environmental scientists	436	564	486	626
Mathematicians	2,396	2,505	1,557	1,614
Life scientists	7,625	8,470	7,873	9,905
Psychologists	1,334	1,877	1,424	1,530
Social scientists	2,265	3,112	3,924	4,007
By highest earned degree:				
Ph.D. or Sc.D.	NA	6,482	6,629	7,429
M.D., D.D.S., D.V.M., etc.	NA	3,247	3,046	4,221
Master's	NA	6,303	6,238	6,258
Bachelor's or equivalent	NA	10,303	8,233	8,428

NA - not available.

TABLE B-2. SCIENTISTS AND ENGINEERS EMPLOYED IN INDEPENDENT NONPROFIT INSTITUTIONS, BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND FIELD IN WHICH PRIMARILY EMPLOYED: OCTOBER 1973

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	ENGI-NEERING	PHYSICAL SCIENCES	ENVIRON-MENTAL SCIENCES	MATHEMAT-ICAL SCIENCES	LIFE SCIENCES	PSYCHOLOGY	SOCIAL SCIENCES
ALL INSTITUTIONS								
TOTAL	26,336	5,546	3,108	626	1,614	9,905	1,530	4,007
LESS THAN $ 500	3,187	342	203	51	99	1,843	274	375
$ 500 - $ 999	2,359	233	166	60	97	1,186	226	391
$1,000 - $4,999	6,976	383	313	192	252	4,065	426	1,345
$5,000 OR MORE	13,814	4,588	2,426	323	1,166	2,811	604	1,896
RESEARCH INSTITUTIONS								
TOTAL	11,196	2,438	1,550	168	581	3,292	481	2,656
LESS THAN $ 500	676	110	67	6	37	233	69	156
$ 500 - $ 999	511	49	56	22	18	214	23	129
$1,000 - $4,999	3,367	89	201	46	186	1,584	113	1,148
$5,000 OR MORE	6,640	2,190	1,226	94	340	1,261	276	1,253
NONPROFIT-ADMINISTERED FFRDC'S								
TOTAL	4,309	2,161	706	157	617	185	49	424
$1,000 - $4,999	55	27	9	0	14	0	0	5
$5,000 OR MORE	4,254	2,134	697	167	603	185	49	419

Life scientists	7,625	8,470	7,873	9,905
Psychologists	1,334	1,877	1,424	1,530
Social scientists	2,265	3,112	3,924	4,007
By highest earned degree:				
Ph.D. or Sc.D.	NA	6,482	6,629	7,429
M.D., D.D.S., D.V.M., etc.	NA	3,247	3,046	4,221
Master's	NA	6,303	6,238	6,258
Bachelor's or equivalent	NA	10,303	8,233	8,428

NA - not available.

TABLE B-2. SCIENTISTS AND ENGINEERS EMPLOYED IN INDEPENDENT NONPROFIT INSTITUTIONS, BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND FIELD IN WHICH PRIMARILY EMPLOYED: OCTOBER 1973

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	ENGINEERING	PHYSICAL SCIENCES	ENVIRONMENTAL SCIENCES	MATHEMATICAL SCIENCES	LIFE SCIENCES	PSYCHOLOGY	SOCIAL SCIENCES
ALL INSTITUTIONS								
TOTAL	26,336	5,546	3,108	626	1,614	9,905	1,530	4,007
LESS THAN $ 500	3,187	342	203	51	99	1,843	274	375
$ 500 - $ 999	2,359	233	166	60	97	1,186	226	391
$1,000 - $4,999	6,976	383	313	192	252	4,065	426	1,345
$5,000 OR MORE	13,814	4,588	2,426	323	1,166	2,811	604	1,896
RESEARCH INSTITUTIONS								
TOTAL	11,196	2,438	1,550	168	581	3,292	481	2,686
LESS THAN $ 500	678	110	67	6	37	233	69	156
$ 500 - $ 999	511	49	56	22	18	214	23	129
$1,000 - $4,999	3,367	89	201	46	186	1,584	113	1,148
$5,000 OR MORE	6,640	2,190	1,226	94	340	1,261	276	1,253
NONPROFIT-ADMINISTERED FFRDC'S								
TOTAL	4,309	2,161	706	167	617	185	49	424
$1,000 - $4,999	55	27	9	0	14	0	0	5
$5,000 OR MORE	4,254	2,134	697	167	603	185	49	419
VOLUNTARY HOSPITALS								
TOTAL	6,495	216	194	109	88	5,020	492	376
LESS THAN $ 500	1,844	80	69	23	43	1,351	137	141
$ 500 - $ 999	690	31	34	10	6	488	57	64
$1,000 - $4,999	2,579	87	45	76	31	1,983	236	121
$5,000 OR MORE	1,382	18	46	0	8	1,198	62	50
ALL OTHER NONPROFIT INSTITUTIONS								
TOTAL	4,336	731	659	182	328	1,408	508	521
LESS THAN $ 500	665	152	67	22	19	259	68	78
$ 500 - $ 999	1,158	153	76	29	73	484	146	198
$1,000 - $4,999	975	180	58	70	21	498	77	71
$5,000 OR MORE	1,538	246	457	62	215	167	217	174

TABLE B-3. GEOGRAPHIC DISTRIBUTION OF SCIENTISTS AND ENGINEERS EMPLOYED IN INDEPENDENT NONPROFIT INSTITUTIONS; BY FIELD IN WHICH PRIMARILY EMPLOYED: OCTOBER 1973

DIVISION AND STATE	TOTAL	ENGINEERING	PHYSICAL SCIENCES	ENVIRONMENTAL	MATHEMATICS	LIFE SCIENCES	PSYCHOLOGY	SOCIAL SCIENCES
UNITED STATES, TOTAL	26,336	5,546	3,108	626	1,614	9,905	1,530	4,007
NEW ENGLAND..............	3,797	710	169	15	263	2,151	189	300
CONNECTICUT.........	166	14	6	2	10	85	27	22
MAINE...............	149	1	2	0	1	134	7	4
MASSACHUSETTS.......	3,385	681	161	13	252	1,855	149	274
NEW HAMPSHIRE.......	0	0	0	0	0	0	0	0
RHODE ISLAND........	91	14	0	0	0	71	6	0
VERMONT.............	6	0	0	0	0	6	0	0
MIDDLE ATLANTIC..........	6,184	469	490	130	400	3,110	567	1,018
NEW JERSEY..........	674	36	68	0	193	45	217	115
NEW YORK............	4,029	294	331	58	184	2,218	274	670
PENNSYLVANIA........	1,481	139	91	72	23	847	76	233
EAST NORTH CENTRAL.......	3,987	1,303	661	105	93	1,196	182	447
ILLINOIS............	1,752	727	219	68	47	430	111	150
INDIANA.............	78	25	3	0	8	32	5	5
MICHIGAN............	380	96	51	23	15	147	11	37
OHIO................	1,730	454	386	14	22	544	55	255
WISCONSIN...........	47	1	2	0	1	43	0	0
WEST NORTH CENTRAL.......	896	52	112	12	61	317	127	215
IOWA................	99	0	0	0	8	0	66	25
KANSAS..............	51	8	1	0	5	9	9	19
MINNESOTA...........	329	18	14	9	25	186	25	52
MISSOURI............	417	26	97	3	23	122	27	119
NEBRASKA............	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	3,018	366	635	137	227	766	171	716
DELAWARE............	7	0	1	2	0	4	0	0
DISTRICT OF COLUMBIA	1,830	169	487	97	111	508	64	394
FLORIDA.............	102	8	14	0	4	64	1	11
GEORGIA.............	28	1	0	8	0	19	0	0
MARYLAND............	283	58	10	1	1	154	10	49
NORTH CAROLINA......	308	26	72	29	27	9	4	141
SOUTH CAROLINA......	0	0	0	0	0	0	0	0
VIRGINIA............	420	104	51	0	84	8	92	81
WEST VIRGINIA.......	40	0	0	0	0	0	0	40
EAST SOUTH CENTRAL.......	577	56	81	5	18	372	12	33
ALABAMA.............	244	41	67	0	13	113	0	10
KENTUCKY............	54	10	10	2	4	10	3	15
MISSISSIPPI.........	0	0	0	0	0	0	0	0
TENNESSEE...........	279	5	4	3	1	249	9	8
WEST SOUTH CENTRAL.......	940	420	47	18	29	264	7	155
ARKANSAS............	0	0	0	0	0	0	0	0
LOUISIANA...........	108	10	27	9	1	42	1	18
OKLAHOMA............	56	3	3	2	1	45	0	2
TEXAS...............	776	407	17	7	27	177	6	135
MOUNTAIN.................	317	33	46	11	10	155	14	48
ARIZONA.............	94	3	17	2	2	52	7	11
COLORADO............	140	26	19	9	1	78	4	3

RHODE ISLAND.........	91	14	0	0	0	71	6	0
VERMONT.............	6	0	0	0	0	6	0	0
MIDDLE ATLANTIC..........	6,184	469	490	130	400	3,110	567	1,018
NEW JERSEY..........	674	36	68	0	193	45	217	115
NEW YORK............	4,029	294	331	58	184	2,218	274	670
PENNSYLVANIA........	1,481	139	91	72	23	847	76	233
EAST NORTH CENTRAL.......	3,987	1,303	661	105	93	1,196	182	447
ILLINOIS............	1,752	727	219	68	47	430	111	150
INDIANA.............	78	25	3	0	8	32	5	5
MICHIGAN............	380	96	51	23	15	147	11	37
OHIO................	1,730	454	386	14	22	544	55	255
WISCONSIN...........	47	1	2	0	1	43	0	0
WEST NORTH CENTRAL.......	896	52	112	12	61	317	127	215
IOWA................	99	0	0	0	8	0	66	25
KANSAS..............	51	8	1	0	5	9	9	19
MINNESOTA...........	329	18	14	9	25	186	25	52
MISSOURI............	417	26	97	3	23	122	27	119
NEBRASKA............	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	3,018	366	635	137	227	766	171	716
DELAWARE............	7	0	1	2	0	4	0	0
DISTRICT OF COLUMBIA	1,830	169	487	97	111	508	64	394
FLORIDA.............	102	8	14	0	4	64	1	11
GEORGIA.............	28	1	0	8	0	19	0	0
MARYLAND............	283	58	10	1	1	154	10	49
NORTH CAROLINA......	308	26	72	29	27	9	4	141
SOUTH CAROLINA......	0	0	0	0	0	0	0	0
VIRGINIA............	420	104	51	0	84	8	92	81
WEST VIRGINIA.......	40	0	0	0	0	0	0	40
EAST SOUTH CENTRAL.......	577	56	81	5	18	372	12	33
ALABAMA.............	244	41	67	0	13	113	0	10
KENTUCKY............	54	10	10	2	4	10	3	15
MISSISSIPPI.........	0	0	0	0	0	0	0	0
TENNESSEE...........	279	5	4	3	1	249	9	8
WEST SOUTH CENTRAL.......	940	420	47	18	29	264	7	155
ARKANSAS............	0	0	0	0	0	0	0	0
LOUISIANA...........	108	10	27	9	1	42	1	18
OKLAHOMA............	56	3	3	2	1	45	0	2
TEXAS...............	776	407	17	7	27	177	6	135
MOUNTAIN.................	317	33	46	11	10	155	14	48
ARIZONA.............	94	3	17	2	2	52	7	11
COLORADO............	140	26	19	9	1	78	4	3
IDAHO...............	0	0	0	0	0	0	0	0
MONTANA.............	0	0	0	0	0	0	0	0
NEVADA..............	0	0	0	0	0	0	0	0
NEW MEXICO..........	76	2	9	0	5	23	3	34
UTAH................	7	2	1	0	2	2	0	0
WYOMING.............	0	0	0	0	0	0	0	0
PACIFIC..................	6,620	2,137	867	193	513	1,574	261	1,075
ALASKA..............	0	0	0	0	0	0	0	0
CALIFORNIA..........	5,339	1,859	644	53	469	1,152	218	944
HAWAII..............	81	14	14	4	2	26	0	21
OREGON..............	274	13	6	2	3	149	19	82
WASHINGTON..........	926	251	203	134	39	247	24	28

TABLE B-4. SCIENTISTS AND ENGINEERS EMPLOYED IN INDEPENDENT NONPROFIT INSTITUTIONS; BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND HIGHEST EARNED DEGREE: OCTOBER 1973

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	PH.D. OR SC.D.	MD, DDS, DVM, ETC.	MASTER'S	BACHELOR'S OR EQUIVALENT
ALL INSTITUTIONS					
TOTAL	26,336	7,429	4,221	6,258	8,428
LESS THAN $ 500	3,187	872	936	535	844
$ 500 - $ 999	2,359	695	418	515	730
$1,000 - $4,999	6,976	2,329	1,669	1,236	1,742
$5,000 OR MORE	13,814	3,532	1,198	3,972	5,112
RESEARCH INSTITUTIONS					
TOTAL	11,196	3,482	766	2,864	4,084
LESS THAN $ 500	678	232	50	189	207
$ 500 - $ 999	511	211	47	117	136
$1,000 - $4,999	3,367	1,360	345	682	980
$5,000 OR MORE	6,640	1,679	324	1,876	2,761
NONPROFIT-ADMINISTERED FFRDC'S					
TOTAL	4,309	1,018	68	1,633	1,590
$1,000 - $4,999	55	15	0	23	17
$5,000 OR MORE	4,254	1,003	68	1,610	1,573
VOLUNTARY HOSPITALS					
TOTAL	6,495	1,585	3,156	655	1,099
LESS THAN $ 500	1,844	471	833	203	337
$ 500 - $ 999	690	152	301	101	136
$1,000 - $4,999	2,579	632	1,256	282	409
$5,000 OR MORE	1,382	330	766	69	217
ALL OTHER NONPROFIT INSTITUTIONS					
TOTAL	4,336	1,344	231	1,104	1,655
LESS THAN $ 500	665	159	53	143	300
$ 500 - $ 999	1,158	333	70	297	453
$1,000 - $4,999	975	322	68	247	336
$5,000 OR MORE	1,538	520	40	417	561

TABLE B-5. TOTAL EMPLOYMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND OCCUPATIONAL GROUP: OCTOBER 1973

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	NUMBER OF INSTITUTIONS	TOTAL EMPLOYMENT	SCIENTISTS AND ENGINEERS		TECHNICIANS	
			TOTAL	R&D	TOTAL	R&D
ALL INSTITUTIONS						
TOTAL	444	271,589	26,336	23,129	29,415	11,475
LESS THAN $ 500	219	98,343	3,187	2,488	9,742	1,911
$ 500 - $ 999	74	36,240	2,359	1,725	3,526	1,074
$1,000 - $4,999	112	63,604	6,976	6,356	8,535	3,587
$5,000 OR MORE	39	53,402	13,814	12,560	7,772	4,903
RESEARCH INSTITUTIONS						
TOTAL	186	29,994	11,196	10,854	4,936	4,205
LESS THAN $ 500	76	1,895	678	613	291	253
$ 500 - $ 999	29	1,290	511	486	258	244
$1,000 - $4,999	60	8,578	3,367	3,273	1,365	1,310
$5,000 OR MORE	21	18,231	6,640	6,482	3,372	2,398
NONPROFIT-ADMINISTERED FFRDC'S						
TOTAL	7	9,721	4,309	4,133	355	914
$1,000 - $4,999	1	85	55	55	2	2

TOTAL	11,196	3,482	766	2,864	4,094
LESS THAN $ 500	678	232	50	189	207
$ 500 - $ 999	511	211	47	117	136
$1,000 - $4,999	3,367	1,360	345	682	983
$5,000 OR MORE	6,640	1,679	324	1,876	2,761
NONPROFIT-ADMINISTERED FFRDC'S					
TOTAL	4,309	1,018	68	1,633	1,590
$1,000 - $4,999	55	15	0	23	17
$5,000 OR MORE	4,254	1,003	68	1,610	1,573
VOLUNTARY HOSPITALS					
TOTAL	6,495	1,585	3,156	655	1,099
LESS THAN $ 500	1,944	471	833	203	337
$ 500 - $ 999	590	152	301	101	136
$1,000 - $4,999	2,579	632	1,256	282	409
$5,000 OR MORE	1,382	330	766	69	217
ALL OTHER NONPROFIT INSTITUTIONS					
TOTAL	4,336	1,334	231	1,106	1,655
LESS THAN $ 500	665	159	53	143	303
$ 500 - $ 999	1,158	333	70	297	453
$1,000 - $4,999	975	322	68	249	336
$5,000 OR MORE	1,538	520	40	417	561

TABLE B-5. TOTAL EMPLOYMENT IN INDEPENDENT NONPROFIT INSTITUTIONS, BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND OCCUPATIONAL GROUP: OCTOBER 1973

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	NUMBER OF INSTITUTIONS	TOTAL EMPLOYMENT	SCIENTISTS AND ENGINEERS		TECHNICIANS	
			TOTAL	R&D	TOTAL	R&D
ALL INSTITUTIONS						
TOTAL	444	271,589	26,336	23,129	29,415	11,475
LESS THAN $ 500	219	98,343	3,287	2,488	9,242	1,911
$ 500 - $ 999	74	36,240	2,259	1,725	3,526	1,074
$1,000 - $4,999	112	83,604	6,976	6,355	8,535	3,587
$5,000 OR MORE	39	53,402	13,814	12,560	7,372	4,903
RESEARCH INSTITUTIONS						
TOTAL	186	29,994	11,196	10,854	4,936	4,205
LESS THAN $ 500	76	1,895	678	613	231	253
$ 500 - $ 999	29	1,290	511	486	254	244
$1,000 - $4,999	60	8,574	3,367	3,273	1,365	1,313
$5,000 OR MORE	21	18,231	6,640	6,482	3,372	2,393
NONPROFIT-ADMINISTERED FFRDC'S						
TOTAL	7	9,721	4,309	4,133	335	914
$1,000 - $4,999	1	86	55	55	2	2
$5,000 OR MORE	6	9,635	4,254	4,078	333	912
VOLUNTARY HOSPITALS						
TOTAL	123	209,732	6,495	5,555	22,110	5,760
LESS THAN $ 500	66	92,560	1,944	1,491	8,109	1,504
$ 500 - $ 999	19	28,218	590	552	2,873	521
$1,000 - $4,999	32	68,377	2,579	2,304	7,557	1,322
$5,000 OR MORE	6	20,552	1,382	1,203	3,571	1,413
ALL OTHER NONPROFIT INSTITUTIONS						
TOTAL	128	22,172	4,336	2,467	1,364	1,096
LESS THAN $ 500	77	3,880	665	384	182	154
$ 500 - $ 999	26	5,732	1,159	587	445	309
$1,000 - $4,999	19	6,553	975	724	461	453
$5,000 OR MORE	6	4,984	1,538	752	276	180

TABLE B-6. GEOGRAPHIC DISTRIBUTION OF SELECTED MANPOWER CHARACTERISTICS OF INDEPENDENT NONPROFIT INSTITUTIONS: OCTOBER 1973

DIVISION AND STATE	NUMBER OF INSTITUTIONS	TOTAL EMPLOYMENT	SCIENTISTS & ENGINEERS		TECHNICIANS	
			TOTAL	R & D	TOTAL	R & D
UNITED STATES, TOTAL	444	271,589	26,336	23,129	29,415	11,475
NEW ENGLAND..............	51	47,493	3,797	3,404	6,220	2,346
CONNECTICUT..........	7	6,885	166	149	541	94
MAINE................	3	2,221	149	141	227	81
MASSACHUSETTS.......	38	34,057	3,385	3,031	5,104	2,099
NEW HAMPSHIRE.......	0	0	0	0	0	0
RHODE ISLAND........	2	3,819	91	77	343	67
VERMONT.............	1	511	6	6	5	5
MIDDLE ATLANTIC...........	125	85,315	6,184	5,182	8,062	2,430
NEW JERSEY..........	10	4,698	674	372	307	101
NEW YORK............	79	54,784	4,029	3,608	5,069	1,567
PENNSYLVANIA........	36	25,833	1,481	1,202	2,686	762
EAST NORTH CENTRAL.......	66	55,462	3,987	3,492	6,136	2,121
ILLINOIS............	27	21,469	1,752	1,493	2,233	1,043
INDIANA.............	4	4,715	78	58	400	46
MICHIGAN............	11	3,915	380	363	477	229
OHIO................	20	25,169	1,730	1,534	3,022	799
WISCONSIN...........	4	194	47	44	4	4
WEST NORTH CENTRAL.......	23	11,898	896	770	1,792	426
IOWA................	1	328	99	24	5	2
KANSAS..............	4	3,009	51	49	694	27
MINNESOTA...........	9	5,513	329	292	793	263
MISSOURI............	9	3,048	417	405	300	134
NEBRASKA............	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0
SOUTH ATLANTIC...........	74	19,511	3,018	2,271	1,267	787
DELAWARE............	1	21	7	7	4	4
DISTRICT OF COLUMBIA	40	11,542	1,830	1,208	597	497
FLORIDA.............	6	2,332	102	87	225	39
GEORGIA.............	2	85	28	26	17	17
MARYLAND............	12	3,948	283	194	303	110
NORTH CAROLINA......	4	569	308	302	44	43
SOUTH CAROLINA......	0	0	0	0	0	0
VIRGINIA............	8	939	420	407	77	77
WEST VIRGINIA.......	1	75	40	40	0	0
EAST SOUTH CENTRAL.......	7	4,811	577	543	561	262
ALABAMA.............	1	522	244	238	145	145
KENTUCKY............	3	125	54	52	22	18
MISSISSIPPI.........	0	0	0	0	0	0
TENNESSEE...........	3	4,164	279	253	394	99
WEST SOUTH CENTRAL.......	18	5,419	940	885	1,123	722
ARKANSAS............	0	0	0	0	0	0
LOUISIANA...........	4	2,199	108	98	218	58
OKLAHOMA............	4	321	56	54	158	157
TEXAS...............	10	2,899	776	733	747	507
MOUNTAIN.................	15	6,117	317	302	623	327

MIDDLE ATLANTIC...........	125	85,315	6,184	5,182	8,062	2,430
NEW JERSEY..........	10	4,698	674	372	307	101
NEW YORK............	79	54,784	4,029	3,598	5,069	1,567
PENNSYLVANIA........	36	25,833	1,481	1,212	2,686	762
EAST NORTH CENTRAL.......	66	55,462	3,987	3,492	6,136	2,121
ILLINOIS............	27	21,469	1,752	1,493	2,233	1,043
INDIANA.............	4	4,715	78	58	400	46
MICHIGAN............	11	3,915	380	363	477	229
OHIO................	20	25,169	1,730	1,534	3,022	799
WISCONSIN...........	4	194	47	44	4	4
WEST NORTH CENTRAL.......	23	11,898	896	774	1,792	426
IOWA................	1	328	99	28	5	2
KANSAS..............	4	3,009	51	49	[illegible]	27
MINNESOTA...........	9	5,513	329	292	793	263
MISSOURI............	9	3,048	417	405	300	134
NEBRASKA............	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0
SOUTH ATLANTIC...........	74	19,511	3,018	2,271	1,267	787
DELAWARE............	1	21	7	7	4	4
DISTRICT OF COLUMBIA	40	11,542	1,830	1,208	597	497
FLORIDA.............	6	2,332	102	87	225	39
GEORGIA.............	2	85	28	26	17	17
MARYLAND............	12	3,948	283	194	303	110
NORTH CAROLINA......	4	569	308	302	44	43
SOUTH CAROLINA......	0	0	0	0	0	0
VIRGINIA............	8	939	420	407	77	77
WEST VIRGINIA.......	1	75	40	40	0	0
EAST SOUTH CENTRAL.......	7	4,811	577	543	561	262
ALABAMA.............	1	522	244	238	145	145
KENTUCKY............	3	125	54	52	22	18
MISSISSIPPI.........	0	0	0	0	0	0
TENNESSEE...........	3	4,164	279	253	394	99
WEST SOUTH CENTRAL.......	18	5,419	940	885	1,123	722
ARKANSAS............	0	0	0	0	0	0
LOUISIANA...........	4	2,199	108	98	218	58
OKLAHOMA............	4	321	56	54	158	157
TEXAS...............	10	2,899	776	733	747	507
MOUNTAIN.................	15	6,117	317	302	623	327
ARIZONA.............	5	2,077	94	84	218	61
COLORADO............	7	2,235	140	135	256	145
IDAHO...............	0	0	0	0	0	0
MONTANA.............	0	0	0	0	0	0
NEVADA..............	0	0	0	0	0	0
NEW MEXICO..........	2	368	76	76	119	119
UTAH................	1	1,437	7	7	30	2
WYOMING.............	0	0	0	0	0	0
PACIFIC..................	65	35,563	6,620	6,280	3,631	2,054
ALASKA..............	0	0	0	0	0	0
CALIFORNIA..........	42	25,097	5,339	5,206	2,427	1,457
HAWAII..............	5	1,024	81	69	83	36
OREGON..............	8	3,540	274	257	416	182
WASHINGTON..........	10	5,902	926	748	705	379

Table B-7. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds: 1953-73

(Dollars in millions)

Fiscal year[1]	Total	Federal Government		Industry		Other sources[2]	
		Amount	Percent of total	Amount	Percent of total	Amount	Percent of total
1953	$ 108	$ 54	50.0	$ 26	24.1	$ 28	25.9
1954[1]	123	61	49.6	31	25.2	31	25.2
1955	135	68	50.4	35	25.9	32	23.7
1956	152	77	50.7	37	24.3	38	25.0
1957	174	86	49.4	37	21.3	51	29.3
1958[1]	199	99	49.7	38	19.1	62	31.2
1959	236	127	53.8	42	17.8	67	28.4
1960[1]	282	166	58.9	48	17.0	68	24.1
1961	361	226	62.6	49	13.6	86	23.8
1962	458	295	64.4	54	11.8	109	23.8
1963	539	365	67.7	55	10.2	119	22.1
1964[1]	600	433	72.2	55	9.2	112	18.6
1965	663	477	71.9	62	9.4	124	18.7
1966[1]	733	525	71.6	70	9.6	138	18.9
1967	771	552	71.6	74	9.6	145	18.8
1968	814	582	71.6	81	9.9	151	18.5
1969[1]	870	616	70.8	93	10.7	161	18.5
1970	916	649	70.8	95	10.4	172	18.8
1971	912	630	69.0	98	10.8	184	20.2
1972	952	653	68.6	101	10.7	198	20.8
1973[1]	1,006	690	68.6	105	10.4	211	21.0

[1] The year in which survey was conducted; data for other years estimated, since not all types of institutions were included in each survey, data for earlier survey years contain some estimates.

[2] Includes funding from institutions' own funds, State and local governments, foundations, voluntary health agencies, and other sources including individuals.

Table B-8. Current expenditures for intramural research and development in independent nonprofit institutions; by source of funds and field of science: 1964, 1966, 1969, and 1973

(Dollars in thousands)

Source of funds and field	1964	1966	1969	1973
Current R&D expenditures	$599,682	$733,548	$869,393	$1,006,277
By source of funds:				
Federal Government	433,038	525,140	615,941	689,921
State government	3,344	5,035	9,988	12,870
Local government	941	2,318	6,066	8,425
Foundations & voluntary health agencies	24,347	29,308	37,564	51,227
Industry	54,992	70,060	92,734	104,952
Institution's own funds	69,807	85,236	83,417	108,562
Other sources	13,213	16,451	23,683	30,320
By field:				
	207,157	224,447	275,596	276,911

1962	458	295	64.4	54	11.8	109	23.8
1963	539	365	67.7	55	10.2	119	22.1
1964[1]	600	433	72.2	55	9.2	112	18.6
1965	663	477	71.9	62	9.4	124	18.7
1966[1]	733	525	71.6	70	9.6	138	18.9
1967	771	552	71.6	74	9.6	145	18.8
1968	814	582	71.6	81	9.9	151	18.5
1969[1]	870	616	70.8	93	10.7	161	18.5
1970	916	649	70.8	95	10.4	172	18.8
1971	912	630	69.0	98	10.8	184	20.2
1972	952	653	68.6	101	10.7	198	20.8
1973[1]	1,006	690	68.6	105	10.4	211	21.0

[1] The year in which survey was conducted; data for other years estimated, since not all types of institutions were included in each survey, data for earlier survey years contain some estimates.

[2] Includes funding from institutions' own funds, State and local governments, foundations, voluntary health agencies, and other sources including individuals.

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Source of funds and field	1964	1966	1969	1973
Current R&D expenditures	$599,682	$733,548	$869,393	$1,006,277
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Federal Government	433,038	525,140	615,941	689,921
State government	3,344	5,035	9,988	12,870
Local government	941	2,318	6,066	8,425
Foundations & voluntary health agencies	24,347	29,308	37,564	51,227
Industry	54,992	70,060	92,734	104,952
Institution's own funds	69,807	85,236	83,417	108,562
Other sources	13,213	16,451	23,683	30,320
By field:				
Engineering	207,157	224,447	275,596	276,911
Physical sciences	89,613	115,882	107,020	92,209
Environmental sciences	13,532	17,784	17,638	29,316
Mathematical sciences	31,572	39,776	35,630	52,125
Life sciences	197,920	232,144	264,835	369,458
Psychology	12,204	24,108	29,568	31,533
Social sciences	47,413	72,402	104,796	143,008
Other sciences, n.e.c.	271	7,005	34,310	11,717

TABLE B-9. CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS: BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND SOURCE OF FUNDS: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	FEDERAL GOVERNMENT	STATE GOVERNMENT	LOCAL GOVERNMENT	FNDNS. & VOL. HEALTH AGENCIES	INDUSTRY	INSTITUTION'S OWN FUNDS	OTHER SOURCES
ALL INSTITUTIONS								
TOTAL	1,006,277	689,921	12,870	8,425	51,227	104,952	108,562	30,320
LESS THAN $ 500	45,096	19,628	912	400	4,295	5,921	11,159	2,781
$ 500 - $ 999	51,576	27,224	1,801	453	5,136	2,938	12,106	1,918
$1,000 - $4,999	247,597	153,184	2,837	1,239	19,207	21,452	35,395	14,283
$5,000 OR MORE	662,008	489,885	7,320	6,333	22,589	74,641	49,902	11,338
RESEARCH INSTITUTIONS								
TOTAL	486,692	310,029	7,792	4,026	25,412	78,895	39,536	21,002
LESS THAN $ 500	18,194	7,819	477	211	1,866	2,841	3,499	1,481
$ 500 - $ 999	19,632	10,659	1,122	348	2,097	1,922	2,522	932
$1,000 - $4,999	144,747	97,090	1,765	1,159	12,335	11,021	12,001	8,876
$5,000 OR MORE	304,149	194,461	4,428	2,308	8,614	63,111	21,514	9,713
NONPROFIT-ADMINISTERED FFRDC'S								
TOTAL	220,630	204,635	1,578	2,327	1,241	6,096	3,860	893
$1,000 - $4,999	2,076	2,034	0	0	0	0	42	0
$5,000 OR MORE	218,554	202,601	1,578	2,327	1,241	6,096	3,818	893
VOLUNTARY HOSPITALS								
TOTAL	163,320	106,460	1,620	1,662	14,312	3,647	31,091	4,528
LESS THAN $ 500	15,421	7,774	229	133	1,852	509	4,235	689
$ 500 - $ 999	13,829	9,811	225	105	939	278	2,000	421
$1,000 - $4,999	65,649	42,290	811	80	5,112	2,308	12,222	2,826
$5,000 OR MORE	68,421	46,585	355	1,344	6,359	552	12,634	592
ALL OTHER NONPROFIT INSTITUTIONS								
TOTAL	135,635	68,797	1,880	410	10,262	16,314	34,075	3,897
LESS THAN $ 500	11,481	4,035	206	56	577	2,571	3,425	611
$ 500 - $ 999	18,145	6,754	454	0	2,050	738	7,584	565
$1,000 - $4,999	35,125	11,770	261	0	1,260	8,123	11,130	2,581
$5,000 OR MORE	70,884	46,238	959	354	6,375	4,882	11,936	140

TABLE B-10. GEOGRAPHIC DISTRIBUTION OF CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY SOURCE OF FUNDS: 1973

(DOLLARS IN THOUSANDS)

DIVISION AND STATE	TOTAL	FEDERAL GOVT.	STATE GOVT.	LOCAL GOVT.	FNDNS. & VOL.HLTH. AGNCS.	INDUS-TRY	INSTN'S OWN FUNDS	OTHER SOURCES
UNITED STATES, TOTAL	1,006,277	689,921	12,870	8,425	51,227	104,952	108,562	30,320
NEW ENGLAND.............	138,673	117,975	772	319	7,408	1,300	8,916	1,983
CONNECTICUT..........	3,496	1,943	1	1	357	27	1,071	96
MAINE................	3,402	2,806	4	4	179	9	387	13
MASSACHUSETTS........	129,817	112,785	767	314	6,811	1,252	6,308	1,580
NEW HAMPSHIRE........	0	0	0	0	0	0	0	0
RHODE ISLAND.........	1,777	331	0	0	55	12	1,090	289
VERMONT..............	181	110	0	0	6	0	60	5
MIDDLE ATLANTIC..........	182,575	104,945	2,480	3,031	18,194	15,348	30,136	8,441
NEW JERSEY...........	12,977	6,258	405	378	991	690	3,969	286
NEW YORK.............	124,670	66,837	1,349	2,579	14,746	9,827	21,642	7,690
PENNSYLVANIA.........	44,928	31,850	726	74	2,457	4,831	4,525	465
EAST NORTH CENTRAL.......	135,023	77,908	1,971	98	3,289	34,888	11,979	4,890
ILLINOIS.............	52,953	34,323	453	12	1,162	9,517	4,606	2,880
INDIANA..............	1,125	567	117	1	16	15	367	42
MICHIGAN.............	11,525	7,032	189	35	1,118	699	1,132	1,320
OHIO.................	68,220	34,978	1,212	50	968	24,654	5,775	583
WISCONSIN............	1,200	1,008	0	0	25	3	99	65
WEST NORTH CENTRAL.......	37,477	22,427	481	659	1,094	2,502	7,627	2,687
IOWA.................	1,153	46	1	0	3	0	1,079	24
KANSAS...............	1,519	542	73	1	167	26	705	5
MINNESOTA............	20,047	11,423	37	12	575	588	4,958	2,454
MISSOURI.............	14,758	10,416	370	646	349	1,888	885	204
NEBRASKA.............	0	0	0	0	0	0	0	0
NORTH DAKOTA.........	0	0	0	0	0	0	0	0
SOUTH DAKOTA.........	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	143,566	94,624	2,894	432	13,468	3,339	22,260	6,549
DELAWARE.............	310	0	3	0	4	2	300	1
DISTRICT OF COLUMBIA	95,947	60,219	1,290	103	12,004	2,326	16,529	3,476
FLORIDA..............	3,669	1,293	14	8	86	63	2,140	65
GEORGIA..............	1,523	352	563	0	0	8	500	100
MARYLAND.............	7,423	4,189	282	2	484	155	2,047	264
NORTH CAROLINA.......	11,715	7,685	541	273	33	610	68	2,505
SOUTH CAROLINA.......	0	0	0	0	0	0	0	0
VIRGINIA.............	21,051	18,958	201	46	857	175	676	138
WEST VIRGINIA........	1,928	1,928	0	0	0	0	0	0
EAST SOUTH CENTRAL.......	15,500	9,119	359	177	554	1,483	3,717	91
ALABAMA..............	8,059	6,583	3	76	102	1,255	39	1
KENTUCKY.............	806	261	353	98	9	46	30	9
MISSISSIPPI..........	0	0	0	0	0	0	0	0
TENNESSEE............	6,635	2,275	3	3	443	182	3,648	81
WEST SOUTH CENTRAL.......	50,847	25,059	526	263	856	16,945	6,661	537
ARKANSAS.............	0	0	0	0	0	0	0	0
LOUISIANA............	4,434	2,640	347	41	62	961	247	136
OKLAHOMA.............	3,121	1,983	5	2	146	60	911	14
TEXAS................	43,292	20,436	174	220	648	15,924	5,503	387
MOUNTAIN.................	12,850	7,986	60	20	197	2,834	1,663	90

31

32

					6	0	60	5
MIDDLE ATLANTIC..........	182,575	104,945	2,480	3,031	18,194	15,348	30,136	8,441
NEW JERSEY..........	12,977	6,258	405	378	991	690	3,969	286
NEW YORK............	124,670	66,837	1,349	2,579	14,746	9,827	21,642	7,690
PENNSYLVANIA........	44,928	31,850	726	74	2,457	4,831	4,525	465
EAST NORTH CENTRAL.......	135,023	77,908	1,971	98	3,289	34,888	11,979	4,890
ILLINOIS............	52,953	34,323	453	12	1,162	9,517	4,606	2,880
INDIANA.............	1,125	567	117	1	16	15	367	42
MICHIGAN............	11,525	7,032	189	35	1,118	699	1,132	1,320
OHIO................	68,220	34,978	1,212	50	968	24,654	5,775	583
WISCONSIN...........	1,200	1,008	0	0	25	3	99	65
WEST NORTH CENTRAL.......	37,477	22,427	481	659	1,094	2,502	7,627	2,687
IOWA................	1,153	46	1	0	3	0	1,079	24
KANSAS..............	1,519	542	73	1	167	26	705	5
MINNESOTA...........	20,047	11,423	37	12	575	588	4,958	2,454
MISSOURI............	14,758	10,416	370	646	349	1,888	885	204
NEBRASKA............	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	143,566	94,624	2,894	432	13,468	3,339	22,260	6,549
DELAWARE............	310	0	3	0	4	2	300	1
DISTRICT OF COLUMBIA	95,947	60,219	1,290	103	12,004	2,326	16,529	3,476
FLORIDA.............	3,669	1,293	14	8	86	63	2,140	65
GEORGIA.............	1,523	352	563	0	0	8	500	100
MARYLAND............	7,423	4,189	282	2	484	155	2,047	264
NORTH CAROLINA......	11,715	7,685	541	273	33	610	68	2,505
SOUTH CAROLINA......	0	0	0	0	0	0	0	0
VIRGINIA............	21,051	18,958	201	46	857	175	676	138
WEST VIRGINIA.......	1,928	1,928	0	0	0	0	0	0
EAST SOUTH CENTRAL.......	15,500	9,119	359	177	554	1,483	3,717	91
ALABAMA.............	8,059	6,583	3	76	102	1,255	39	1
KENTUCKY............	806	261	353	98	9	46	30	9
MISSISSIPPI.........	0	0	0	0	0	0	0	0
TENNESSEE...........	6,635	2,275	3	3	443	182	3,648	81
WEST SOUTH CENTRAL.......	50,847	25,059	526	263	856	16,945	6,661	537
ARKANSAS............	0	0	0	0	0	0	0	0
LOUISIANA...........	4,434	2,640	347	41	62	961	247	136
OKLAHOMA............	3,121	1,983	5	2	146	60	911	14
TEXAS...............	43,292	20,436	174	220	648	15,924	5,503	387
MOUNTAIN.................	12,850	7,986	60	20	197	2,834	1,663	90
ARIZONA.............	1,632	944	31	10	74	52	481	40
COLORADO............	5,437	1,652	29	10	100	2,782	821	43
IDAHO...............	0	0	0	0	0	0	0	0
MONTANA.............	0	0	0	0	0	0	0	0
NEVADA..............	0	0	0	0	0	0	0	0
NEW MEXICO..........	5,626	5,235	0	0	23	0	361	7
UTAH................	155	155	0	0	0	0	0	0
WYOMING.............	0	0	0	0	0	0	0	0
PACIFIC..................	289,766	229,878	3,327	3,426	6,167	26,313	15,603	5,052
ALASKA..............	0	0	0	0	0	0	0	0
CALIFORNIA..........	233,478	187,335	1,139	3,284	4,985	19,423	12,645	4,667
HAWAII..............	2,908	1,464	308	0	434	363	307	32
OREGON..............	11,318	8,784	1,103	141	212	441	349	288
WASHINGTON..........	42,062	32,295	777	1	536	6,086	2,302	65

TABLE B-11. TOTAL AND FEDERALLY FINANCED CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND TYPE OF R&D ACTIVITY: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	ALL SOURCES				FEDERAL GOVERNMENT			
	TOTAL	BASIC RESEARCH	APPLIED RESEARCH	DEVELOPMENT	TOTAL	BASIC RESEARCH	APPLIED RESEARCH	DEVELOPMENT
ALL INSTITUTIONS								
TOTAL	1,006,277	357,182	353,335	295,760	689,921	218,074	233,526	238,321
LESS THAN $ 500	45,096	21,864	16,256	6,976	19,628	9,517	7,273	2,838
$ 500 - $ 999	51,576	26,940	17,044	7,592	27,224	15,281	8,809	3,134
$1,000 - $4,999	247,597	132,407	78,973	36,217	153,184	80,072	48,898	24,214
$5,000 OR MORE	662,008	175,971	241,062	244,975	489,885	113,204	168,546	208,135
RESEARCH INSTITUTIONS								
TOTAL	486,692	183,207	208,884	94,601	310,029	113,073	133,205	63,751
LESS THAN $ 500	18,194	8,560	7,119	2,515	7,819	3,583	3,071	1,165
$ 500 - $ 999	19,602	11,382	5,245	2,975	10,659	6,862	2,589	1,208
$1,000 - $4,999	144,747	81,629	41,573	21,545	97,090	53,419	26,264	17,407
$5,000 OR MORE	304,149	81,636	154,947	67,556	194,461	49,209	101,281	43,971
NONPROFIT-ADMINISTERED FFRDC'S								
TOTAL	220,630	39,205	22,815	158,610	204,635	31,235	22,341	151,059
$1,000 - $4,999	2,076	0	2,076	0	2,034	0	2,034	0
$5,000 OR MORE	218,554	39,205	20,739	158,610	202,601	31,235	20,307	151,059
VOLUNTARY HOSPITALS								
TOTAL	163,320	93,410	52,748	17,162	106,460	59,686	35,802	10,972
LESS THAN $ 500	15,421	8,901	4,376	2,144	7,774	4,464	2,329	981
$ 500 - $ 999	13,829	6,222	5,563	2,044	9,811	4,243	4,175	1,393
$1,000 - $4,999	65,649	35,182	25,769	4,598	42,290	21,677	17,916	2,697
$5,000 OR MORE	68,421	43,105	17,040	8,276	46,585	29,302	11,382	5,901
ALL OTHER NONPROFIT INSTITUTIONS								
TOTAL	135,635	41,360	68,888	25,387	68,797	14,030	42,178	12,539
LESS THAN $ 500	11,481	4,403	4,761	2,317	4,035	1,470	1,873	692
$ 500 - $ 999	18,145	9,336	6,216	2,573	6,754	4,176	2,045	533
$1,000 - $4,999	35,125	15,596	9,555	9,974	11,770	4,976	2,684	4,110
$5,000 OR MORE	70,884	12,025	48,336	10,523	46,238	3,458	35,576	7,204

TABLE B-12. CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND FIELD OF SCIENCE: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	ENGINEERING	PHYSICAL SCIENCES	ENVIRONMENTAL SCIENCES	MATHEMATICAL SCIENCES	LIFE SCIENCES	PSYCHOLOGY	SOCIAL SCIENCES	OTHER SCIENCES, NEC
ALL INSTITUTIONS									
TOTAL	1,006,277	276,911	92,209	29,316	52,125	369,458	31,533	143,008	11,717
LESS THAN $ 500	45,096	4,655	2,077	1,301	1,526	27,593	2,102	5,469	273
$ 500 - $ 999	51,576	2,838	2,307	2,358	871	33,852	2,067	7,009	274
$1,000 - $4,999	247,597	12,416	10,751	6,813	7,314	152,299	3,694	52,074	2,236
$5,000 OR MORE	662,008	257,002	77,074	18,844	42,314	155,714	23,670	78,456	8,934
RESEARCH INSTITUTIONS									
TOTAL	486,692	97,689	49,866	9,445	34,100	158,905	18,265	112,982	5,440
LESS THAN $ 500	18,194	2,053	815	359	990	8,095	1,506	4,295	81
$ 500 - $ 999	19,602	817	1,547	1,486	695	9,703	489	4,605	260
$1,000 - $4,999	144,747	2,302	7,576	2,556	6,101	74,511	2,058	47,417	2,226
$5,000 OR MORE	304,149	92,517	39,928	5,044	26,314	66,596	14,212	56,665	2,873
NONPROFIT-ADMINISTERED FFRDC'S									
TOTAL	220,630	141,468	21,125	9,159	15,221	12,718	1,387	13,491	6,061
$1,000 - $4,999	2,076	1,019	340	0	528	0	0	189	0
$5,000 OR MORE	218,554	140,449	20,785	9,159	14,693	12,718	1,387	13,302	6,061

$1,000 - $4,999	144,747	81,629	41,573	21,545	97,090	53,419	26,264	17,407
$5,000 OR MORE	304,149	81,636	154,947	67,566	194,461	49,209	101,281	43,971
NONPROFIT-ADMINISTERED FFRDC'S								
TOTAL	220,630	39,205	22,815	158,610	204,635	31,235	22,341	151,059
$1,000 - $4,999	2,076	0	2,076	0	2,034	0	2,034	0
$5,000 OR MORE	218,554	39,205	20,739	158,610	202,601	31,235	20,307	151,059
VOLUNTARY HOSPITALS								
TOTAL	163,320	93,410	52,748	17,162	106,460	59,686	35,802	10,972
LESS THAN $ 500	15,421	8,901	4,376	2,144	7,774	4,464	2,329	981
$ 500 - $ 999	13,829	6,222	5,553	2,044	9,811	4,243	4,175	1,393
$1,000 - $4,999	65,649	35,182	25,769	4,698	42,290	21,677	17,916	2,697
$5,000 OR MORE	68,421	43,105	17,040	8,276	46,585	29,302	11,382	5,901
ALL OTHER NONPROFIT INSTITUTIONS								
TOTAL	135,635	41,360	68,888	25,387	68,797	14,030	42,178	12,539
LESS THAN $ 500	11,481	4,403	4,761	2,317	4,035	1,470	1,873	692
$ 500 - $ 999	18,145	9,336	6,236	2,573	6,754	4,176	2,045	533
$1,000 - $4,999	35,125	15,596	9,555	9,974	11,770	4,976	2,684	4,110
$5,000 OR MORE	70,884	12,025	48,336	10,523	46,238	3,458	35,576	7,204

TABLE B-12. CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND FIELD OF SCIENCE: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	ENGINEERING	PHYSICAL SCIENCES	ENVIRONMENTAL SCIENCES	MATHEMATICAL SCIENCES	LIFE SCIENCES	PSYCHOLOGY	SOCIAL SCIENCES	OTHER SCIENCES, NEC
ALL INSTITUTIONS									
TOTAL	1,006,277	276,911	92,209	29,316	52,125	369,458	31,533	143,008	11,717
LESS THAN $ 500	45,096	4,655	2,077	1,301	1,526	27,593	2,102	5,469	273
$ 500 - $ 999	51,576	2,838	2,307	2,358	871	33,852	2,067	7,009	274
$1,000 - $4,999	247,597	12,416	10,751	6,813	7,314	152,299	3,694	52,074	2,236
$5,000 OR MORE	662,008	257,002	77,074	18,844	42,314	155,714	23,670	78,456	8,934
RESEARCH INSTITUTIONS									
TOTAL	486,692	97,689	49,366	9,445	34,130	158,905	18,265	112,982	5,440
LESS THAN $ 500	18,194	2,053	815	359	990	8,095	1,506	4,295	81
$ 500 - $ 999	19,602	817	1,547	1,486	695	9,703	489	4,605	260
$1,000 - $4,999	144,747	2,302	7,576	2,556	6,101	74,511	2,058	47,417	2,226
$5,000 OR MORE	304,149	92,517	39,928	5,044	26,314	66,596	14,212	56,665	2,873
NONPROFIT-ADMINISTERED FFRDC'S									
TOTAL	220,630	141,468	21,125	9,159	15,221	12,718	1,387	13,491	6,061
$1,000 - $4,999	2,076	1,019	340	0	528	0	0	189	0
$5,000 OR MORE	218,554	140,449	20,785	9,159	14,693	12,718	1,387	13,302	6,061
VOLUNTARY HOSPITALS									
TOTAL	163,320	1,714	4,660	41	2,064	144,431	4,589	5,605	216
LESS THAN $ 500	15,421	96	108	0	378	14,461	155	31	192
$ 500 - $ 999	13,829	36	101	0	99	13,159	415	5	14
$1,000 - $4,999	65,649	505	112	41	594	62,720	1,475	192	10
$5,000 OR MORE	68,421	1,077	4,339	0	993	54,091	2,544	5,377	0
ALL OTHER NONPROFIT INSTITUTIONS									
TOTAL	135,635	36,040	16,558	10,571	740	53,404	7,292	10,930	0
LESS THAN $ 500	11,481	2,506	1,154	942	258	5,037	441	1,143	0
$ 500 - $ 999	18,145	1,985	659	872	77	10,990	1,163	2,399	0
$1,000 - $4,999	35,125	8,590	2,723	4,216	91	15,068	161	4,276	0
$5,000 OR MORE	70,884	22,959	12,022	4,541	314	22,309	5,527	3,112	0

TABLE B-13. GEOGRAPHIC DISTRIBUTION OF CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY FIELD OF SCIENCE: 1973

(DOLLARS IN THOUSANDS)

DIVISION AND STATE	TOTAL	ENGI-NEERING	PHYSICAL SCIENCES	ENVIRON-MENTAL	MATHE-MATICS	LIFE SCIENCES	PSYCHOL-OGY	SOCIAL SCIENCES	OTHER
UNITED STATES, TOTAL	1,006,277	276,911	92,209	29,316	52,125	369,458	31,533	143,008	11,717
NEW ENGLAND..............	138,673	51,703	1,668	1,475	4,530	73,432	1,959	3,517	389
CONNECTICUT.........	3,496	0	260	48	244	2,097	451	227	169
MAINE...............	3,402	2	1	0	3	3,354	41	0	1
MASSACHUSETTS.......	129,817	51,701	1,406	1,427	4,282	66,027	1,465	3,290	219
NEW HAMPSHIRE.......	0	0	0	0	0	0	0	0	0
RHODE ISLAND........	1,777	0	1	0	1	1,773	2	0	0
VERMONT.............	181	0	0	0	0	181	0	0	0
MIDDLE ATLANTIC..........	182,575	18,404	12,786	5,827	5,673	100,792	10,334	27,967	792
NEW JERSEY..........	12,977	176	1,160	62	1,265	4,299	5,637	364	14
NEW YORK............	124,670	13,821	7,920	2,464	3,777	71,022	3,999	21,639	28
PENNSYLVANIA........	44,928	4,407	3,706	3,301	631	25,471	698	5,964	750
EAST NORTH CENTRAL.......	135,023	41,713	26,129	1,374	13,253	35,390	2,098	14,572	494
ILLINOIS............	52,953	18,117	5,239	293	10,827	12,594	491	4,914	478
INDIANA.............	1,125	1	1	0	157	806	27	133	0
MICHIGAN............	11,525	2,139	2,281	744	1,371	3,350	173	1,462	5
OHIO................	68,220	21,416	18,529	330	896	17,576	1,407	8,055	11
WISCONSIN...........	1,200	40	79	7	2	1,064	0	8	0
WEST NORTH CENTRAL.......	37,477	1,426	3,201	718	1,681	21,447	889	6,026	2,089
IOWA................	1,153	0	0	0	0	0	0	1,153	0
KANSAS..............	1,519	109	48	3	61	420	766	112	0
MINNESOTA...........	20,047	267	352	617	759	16,646	104	1,290	12
MISSOURI............	14,758	1,050	2,801	98	861	4,381	19	3,471	2,077
NEBRASKA............	0	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	143,566	21,466	16,909	7,087	8,637	44,664	6,801	30,246	7,756
DELAWARE............	310	1	62	81	0	79	5	82	0
DISTRICT OF COLUMBIA	95,947	15,076	13,267	6,265	697	35,692	355	23,312	1,283
FLORIDA.............	3,669	8	35	20	19	3,525	24	34	4
GEORGIA.............	1,523	0	0	600	0	923	0	0	0
MARYLAND............	7,423	1,073	272	105	73	4,229	709	953	9
NORTH CAROLINA......	11,715	2,394	2,370	11	4,646	63	7	1,825	399
SOUTH CAROLINA......	0	0	0	0	0	0	0	0	0
VIRGINIA............	21,051	2,914	903	5	3,202	153	5,701	2,112	6,061
WEST VIRGINIA.......	1,928	0	0	0	0	0	0	1,928	0
EAST SOUTH CENTRAL.......	15,500	2,250	418	738	101	11,516	66	407	4
ALABAMA.............	8,059	2,082	328	650	0	4,871	0	128	0
KENTUCKY............	806	102	90	58	99	125	65	264	3
MISSISSIPPI.........	0	0	0	0	0	0	0	0	0
TENNESSEE...........	6,635	66	0	30	2	6,520	1	15	1
WEST SOUTH CENTRAL.......	50,647	25,373	1,092	1,137	1,722	15,984	142	5,396	1
ARKANSAS............	0	0	0	0	0	0	0	0	0
LOUISIANA...........	4,434	856	413	0	0	2,422	0	743	0
OKLAHOMA............	3,121	52	15	6	17	2,945	17	68	1
TEXAS...............	43,292	24,465	664	1,131	1,705	10,617	125	4,585	0
MOUNTAIN.................	12,850	102	3,164	54	218	7,543	275	1,375	119
ARIZONA.............	1,632	54	677	54	24	534	14	273	2
COLORADO............	5,437	5	2,487	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

35

36

		0	0	0	0	181	0	0	0
MIDDLE ATLANTIC..........	182,575	18,404	12,786	5,827	5,673	100,792	10,334	27,967	792
NEW JERSEY..........	12,977	176	1,160	62	1,265	4,299	5,637	364	14
NEW YORK............	124,670	13,821	7,920	2,464	3,777	71,022	3,999	21,639	28
PENNSYLVANIA........	44,928	4,407	3,706	3,301	631	25,471	698	5,964	750
EAST NORTH CENTRAL.......	135,023	41,713	26,129	1,374	13,253	35,390	2,098	14,572	494
ILLINOIS............	52,953	18,117	5,239	293	10,827	12,594	491	4,914	478
INDIANA.............	1,125	1	1	0	157	806	27	133	0
MICHIGAN............	11,525	2,139	2,281	744	1,371	3,350	173	1,462	5
OHIO................	68,220	21,416	18,529	330	896	17,576	1,407	8,055	11
WISCONSIN...........	1,200	40	79	7	2	1,064	0	8	0
WEST NORTH CENTRAL.......	37,477	1,426	3,201	718	1,681	21,447	889	6,026	2,089
IOWA................	1,153	0	0	0	0	0	0	1,153	0
KANSAS..............	1,519	109	48	3	61	420	766	112	0
MINNESOTA...........	20,047	267	352	617	759	16,646	104	1,290	12
MISSOURI............	14,758	1,050	2,801	98	861	4,381	19	3,471	2,077
NEBRASKA............	0	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	143,566	21,466	16,909	7,087	8,637	44,664	6,801	30,246	7,756
DELAWARE............	310	1	62	81	0	79	5	82	0
DISTRICT OF COLUMBIA	95,947	15,076	13,267	6,265	697	35,692	355	23,312	1,283
FLORIDA.............	3,669	8	35	20	19	3,525	24	34	4
GEORGIA.............	1,523	0	0	600	0	923	0	0	0
MARYLAND............	7,423	1,073	272	105	73	4,229	709	953	9
NORTH CAROLINA......	11,715	2,394	2,370	11	4,646	63	7	1,825	399
SOUTH CAROLINA......	0	0	0	0	0	0	0	0	0
VIRGINIA............	21,051	2,914	903	5	3,202	153	5,701	2,112	6,061
WEST VIRGINIA.......	1,928	0	0	0	0	0	0	1,928	0
EAST SOUTH CENTRAL.......	15,500	2,250	418	738	101	11,516	66	407	4
ALABAMA.............	8,059	2,082	328	650	0	4,871	0	128	0
KENTUCKY............	806	102	90	58	99	125	65	264	3
MISSISSIPPI.........	0	0	0	0	0	0	0	0	0
TENNESSEE...........	6,635	66	0	30	2	6,520	1	15	1
WEST SOUTH CENTRAL.......	50,847	25,373	1,092	1,137	1,722	15,984	142	5,396	1
ARKANSAS............	0	0	0	0	0	0	0	0	0
LOUISIANA...........	4,434	856	413	0	0	2,422	0	743	0
OKLAHOMA............	3,121	52	15	6	17	2,945	17	68	1
TEXAS...............	43,292	24,465	664	1,131	1,705	10,617	125	4,585	0
MOUNTAIN.................	12,850	102	3,164	54	218	7,543	275	1,375	119
ARIZONA.............	1,632	54	677	54	24	534	14	273	2
COLORADO............	5,437	5	2,487	0	194	2,675	71	2	3
IDAHO...............	0	0	0	0	0	0	0	0	0
MONTANA.............	0	0	0	0	0	0	0	0	0
NEVADA..............	0	0	0	0	0	0	0	0	0
NEW MEXICO..........	5,626	0	0	0	0	0	0	0	0
UTAH................	155	43	0	0	0	4,222	190	1,100	114
WYOMING.............	0	0	0	0	0	112	0	0	0
PACIFIC..................	289,766	114,474	26,842	10,906	16,310	58,690	8,969	53,502	73
ALASKA..............	0	0	0	0	0	0	0	0	0
CALIFORNIA..........	233,476	101,983	16,275	4,021	13,830	42,224	6,557	48,575	13
HAWAII..............	2,908	615	154	524	124	1,187	0	266	38
OREGON..............	11,318	420	123	38	426	4,981	1,625	3,683	22
WASHINGTON..........	42,062	11,456	10,290	6,323	1,930	10,298	787	978	0

TABLE B-14. FEDERALLY FINANCED CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS: BY TYPE OF INSTITUTION, R&D EXPENDITURE-SIZE CLASS, AND FIELD OF SCIENCE: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL	ENGI-NEERING	PHYSICAL SCIENCES	ENVIRON-MENTAL SCIENCES	MATHEMAT-ICAL SCIENCES	LIFE SCIENCES	PSYCHO-LOGY	SOCIAL SCIENCES	OTHER SCIENCES, NEC
ALL INSTITUTIONS									
TOTAL	689,921	220,884	60,490	16,049	41,633	240,825	21,283	79,419	9,338
LESS THAN $ 500	19,628	1,525	655	348	1,039	13,238	1,414	1,368	41
$ 500 - $ 999	27,224	611	1,009	937	504	19,803	1,263	2,921	176
$1,000 - $4,999	153,184	5,609	5,374	1,567	5,370	99,455	1,736	32,063	2,010
$5,000 OR MORE	489,885	213,139	53,452	13,197	34,720	108,329	16,870	43,067	7,111
RESEARCH INSTITUTIONS									
TOTAL	310,029	64,642	30,793	5,254	26,045	103,162	14,078	62,696	3,359
LESS THAN $ 500	7,819	1,152	450	138	554	3,293	962	1,219	41
$ 500 - $ 999	10,659	367	782	603	375	5,721	387	2,248	176
$1,000 - $4,999	97,090	1,894	3,627	807	4,193	51,617	1,223	31,719	2,010
$5,000 OR MORE	194,461	61,229	25,924	3,706	20,923	42,531	11,506	27,510	1,132
NONPROFIT-ADMINISTERED FFRDC'S									
TOTAL	204,635	136,672	17,578	7,269	13,240	11,097	1,134	11,666	5,979
$1,000 - $4,999	2,034	985	332	0	528	0	0	189	0
$5,000 OR MORE	202,601	135,687	17,246	7,269	12,712	11,097	1,134	11,477	5,979
VOLUNTARY HOSPITALS									
TOTAL	106,460	943	2,544	20	1,890	95,776	2,447	2,840	0
LESS THAN $ 500	7,774	63	25	0	321	7,290	58	17	0
$ 500 - $ 999	9,811	22	90	0	95	9,333	268	3	0
$1,000 - $4,999	42,290	283	41	20	593	40,817	472	64	0
$5,000 OR MORE	46,585	575	2,388	0	881	38,336	1,649	2,756	0
ALL OTHER NONPROFIT INSTITUTIONS									
TOTAL	68,797	18,627	9,575	3,506	458	30,790	3,624	2,217	0
LESS THAN $ 500	4,035	310	170	210	164	2,655	394	132	0
$ 500 - $ 999	6,754	222	137	334	34	4,749	608	670	0
$1,000 - $4,999	11,770	2,447	1,374	740	56	7,021	41	91	0
$5,000 OR MORE	46,238	15,648	7,894	2,222	204	16,365	2,581	1,324	0

TABLE B-15. GEOGRAPHIC DISTRIBUTION OF FEDERALLY FINANCED CURRENT EXPENDITURES FOR INTRAMURAL RESEARCH AND DEVELOPMENT IN INDEPENDENT NONPROFIT INSTITUTIONS; BY FIELD OF SCIENCE: 1973

(DOLLARS IN THOUSANDS)

DIVISION AND STATE	TOTAL	ENGI-NEERING	PHYSICAL SCIENCES	ENVIRON-MENTAL	MATHE-MATICS	LIFE SCIENCES	PSYCHOL-OGY	SOCIAL SCIENCES	OTHER
UNITED STATES, TOTAL	689,921	220,884	60,490	16,049	41,633	240,825	21,283	79,419	9,338
NEW ENGLAND.............	117,975	51,096	1,168	1,134	3,997	55,906	1,693	2,807	174
CONNECTICUT.........	1,943	0	72	8	224	1,181	420	38	0
MAINE...............	2,806	1	1	0	3	2,762	39	0	0
MASSACHUSETTS.......	112,785	51,095	1,094	1,126	3,769	51,526	1,232	2,769	174
NEW HAMPSHIRE.......	0	0	0	0	0	0	0	0	0
RHODE ISLAND........	331	0	1	0	1	327	2	0	0
VERMONT.............	110	0	0	0	0	110	0	0	0
MIDDLE ATLANTIC..........	104,945	12,051	7,858	1,510	3,934	60,161	5,102	13,786	543
NEW JERSEY..........	6,258	42	368	32	504	2,530	2,64[illegible]	128	7
NEW YORK............	66,837	9,415	4,877	207	2,982	39,298	1,880	8,175	3
PENNSYLVANIA........	31,850	2,594	2,613	1,271	448	18,333	575	5,483	533
EAST NORTH CENTRAL.......	77,908	23,388	14,951	736	12,033	19,491	822	6,406	81
ILLINOIS............	34,323	10,591	3,520	20	10,425	7,943	6	1,737	81
INDIANA.............	567	1	1	0	157	366	9	33	0
MICHIGAN............	7,032	1,490	1,556	547	1,001	1,980	45	413	0
OHIO................	34,978	11,288	9,816	166	449	8,277	762	4,220	0
WISCONSIN...........	1,008	18	58	3	1	925	0	3	0
WEST NORTH CENTRAL.......	22,427	1,023	2,411	636	1,302	11,978	467	2,735	1,875
IOWA................	46	0	0	0	0	0	0	46	0
KANSAS..............	542	28	5	1	11	94	383	20	0
MINNESOTA...........	11,423	224	246	584	675	8,557	72	1,057	8
MISSOURI............	10,416	771	2,160	51	616	3,327	12	1,612	1,867
NEBRASKA............	0	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	94,624	16,615	11,186	2,868	5,299	31,673	5,775	14,690	6,518
DELAWARE............	0	0	0	0	0	0	0	0	0
DISTRICT OF COLUMBIA	60,219	11,694	8,150	2,600	452	27,708	283	9,199	133
FLORIDA.............	1,293	3	21	10	13	1,200	17	27	2
GEORGIA.............	352	0	0	229	0	123	0	0	0
MARYLAND............	4,189	234	101	28	65	2,566	591	596	8
NORTH CAROLINA......	7,685	1,974	2,019	1	1,567	16	0	1,712	396
SOUTH CAROLINA......	0	0	0	0	0	0	0	0	0
VIRGINIA............	18,958	2,710	895	0	3,202	60	4,884	1,228	5,979
WEST VIRGINIA.......	1,928	0	0	0	0	0	0	1,928	0
EAST SOUTH CENTRAL.......	9,119	1,520	124	451	23	6,853	11	134	3
ALABAMA.............	6,583	1,480	108	445	0	4,500	0	50	0
KENTUCKY............	261	40	16	6	21	80	11	84	3
MISSISSIPPI.........	0	0	0	0	0	0	0	0	0
TENNESSEE...........	2,275	0	0	0	2	2,273	0	0	0
WEST SOUTH CENTRAL.......	25,059	10,372	404	301	1,162	7,778	115	4,926	1
ARKANSAS............	0	0	0	0	0	0	0	0	0
LOUISIANA...........	2,640	483	241	0	0	1,451	0	465	0
OKLAHOMA............	1,983	27	8	2	11	1,903	5	26	1
TEXAS...............	20,436	9,862	155	299	1,151	4,424	110	4,435	0
MOUNTAIN.................	7,986	79	698	2	32	5,712	217	1,131	115
ARIZONA.............	944	34	566	2	19	282	10	30	1
COLORADO............	1,652	2	132	0	13	1,487	17	1	0

RHODE ISLAND........	331	0	1	0	1	327	2	0	0
VERMONT.............	110	0	0	0	0	110	0	0	0
MIDDLE ATLANTIC..........	104,945	12,351	7,858	1,510	3,934	60,161	5,102	13,786	543
NEW JERSEY..........	6,258	42	368	32	504	2,530	2,647	128	7
NEW YORK............	66,837	9,415	4,877	207	2,982	39,298	1,880	8,175	3
PENNSYLVANIA........	31,850	2,594	2,613	1,271	448	18,333	575	5,483	533
EAST NORTH CENTRAL.......	77,908	23,388	14,951	736	12,033	19,491	822	6,406	81
ILLINOIS............	34,323	10,591	3,520	20	10,425	7,943	6	1,737	81
INDIANA.............	567	1	1	0	157	366	9	33	0
MICHIGAN............	7,032	1,490	1,556	547	1,001	1,980	45	413	0
OHIO................	34,978	11,288	9,816	166	449	8,277	762	4,220	0
WISCONSIN...........	1,008	18	58	3	1	925	0	3	0
WEST NORTH CENTRAL.......	22,427	1,023	2,411	636	1,302	11,978	467	2,735	1,875
IOWA................	46	0	0	0	0	0	0	46	0
KANSAS..............	542	28	5	1	11	94	383	20	0
MINNESOTA...........	11,423	224	246	584	675	8,557	72	1,057	8
MISSOURI............	10,416	771	2,160	51	616	3,327	12	1,612	1,867
NEBRASKA............	0	0	0	0	0	0	0	0	0
NORTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH DAKOTA........	0	0	0	0	0	0	0	0	0
SOUTH ATLANTIC...........	94,624	16,615	11,186	2,868	5,299	31,673	5,775	14,690	6,518
DELAWARE............	0	0	0	0	0	0	0	0	0
DISTRICT OF COLUMBIA	60,219	11,694	8,150	2,600	452	27,708	283	9,199	133
FLORIDA.............	1,293	3	21	10	13	1,200	17	27	2
GEORGIA.............	352	0	0	229	0	123	0	0	0
MARYLAND............	4,189	234	101	28	65	2,566	591	596	8
NORTH CAROLINA......	7,685	1,974	2,019	1	1,567	16	0	1,712	396
SOUTH CAROLINA......	0	0	0	0	0	0	0	0	0
VIRGINIA............	18,958	2,710	895	0	3,202	60	4,884	1,228	5,979
WEST VIRGINIA.......	1,928	0	0	0	0	0	0	1,928	0
EAST SOUTH CENTRAL.......	9,119	1,520	124	451	23	6,853	11	134	3
ALABAMA.............	6,583	1,480	108	445	0	4,500	0	50	0
KENTUCKY............	261	40	16	6	21	80	11	84	3
MISSISSIPPI.........	0	0	0	0	0	0	0	0	0
TENNESSEE...........	2,275	0	0	0	2	2,273	0	0	0
WEST SOUTH CENTRAL.......	25,059	10,372	404	301	1,162	7,778	115	4,926	1
ARKANSAS............	0	0	0	0	0	0	0	0	0
LOUISIANA...........	2,640	483	241	0	0	1,451	0	465	0
OKLAHOMA............	1,993	27	8	2	11	1,903	5	26	1
TEXAS...............	20,436	9,862	155	299	1,151	4,424	110	4,435	0
MOUNTAIN.................	7,986	79	698	2	32	5,712	217	1,131	115
ARIZONA.............	944	34	566	2	19	282	10	30	1
COLORADO............	1,652	2	132	0	13	1,487	17	1	0
IDAHO...............	0	0	0	0	0	0	0	0	0
MONTANA.............	0	0	0	0	0	0	0	0	0
NEVADA..............	0	0	0	0	0	0	0	0	0
NEW MEXICO..........	5,235	0	0	0	0	3,831	190	1,100	114
UTAH................	155	43	0	0	0	112	0	0	0
WYOMING.............	0	0	0	0	0	0	0	0	0
PACIFIC..................	229,878	104,740	21,690	8,411	13,851	41,273	7,081	32,804	28
ALASKA..............	0	0	0	0	0	0	0	0	0
CALIFORNIA..........	187,335	95,662	13,739	3,128	11,802	28,433	5,478	29,085	8
HAWAII..............	1,464	150	59	364	66	825	0	0	0
OREGON..............	8,784	364	110	24	417	3,938	949	2,962	20
WASHINGTON..........	32,295	8,564	7,782	4,895	1,566	8,077	654	757	0

TABLE B-16. SELECTED FINANCIAL CHARACTERISTICS OF INDEPENDENT NONPROFIT INSTITUTIONS: BY TYPE OF INSTITUTION AND R&D EXPENDITURE-SIZE CLASS: 1973

(THOUSANDS OF DOLLARS)

TYPE OF INSTITUTION AND R&D EXPENDITURE SIZE CLASS (THOUSANDS OF DOLLARS)	TOTAL EXPENDITURES ALL ACTIVITIES	INTRAMURAL RESEARCH AND DEVELOPMENT		
		CURRENT		CAPITAL
		TOTAL	FEDERAL	
ALL INSTITUTIONS				
TOTAL	3,717,546	1,006,277	689,921	67,062
LESS THAN $ 500	825,068	45,096	19,628	4,249
$ 500 - $ 999	415,278	51,576	27,224	3,910
$1,000 - $4,999	1,363,692	247,597	153,184	27,463
$5,000 OR MORE	1,113,508	662,038	489,885	31,440
RESEARCH INSTITUTIONS				
TOTAL	662,216	486,692	310,029	37,595
LESS THAN $ 500	33,635	18,194	7,819	1,507
$ 500 - $ 999	27,561	19,602	10,659	2,067
$1,000 - $4,999	188,967	144,747	97,090	14,400
$5,000 OR MORE	412,053	304,149	194,461	19,621
NONPROFIT-ADMINISTERED FFRDC'S				
TOTAL	230,543	220,630	204,635	5,738
$1,000 - $4,999	2,076	2,076	2,034	0
$5,000 OR MORE	228,467	218,554	202,601	5,738
VOLUNTARY HOSPITALS				
TOTAL	2,225,302	163,320	106,460	16,617
LESS THAN $ 500	723,265	15,421	7,774	1,703
$ 500 - $ 999	311,080	13,829	9,811	1,051
$1,000 - $4,999	874,393	65,649	42,290	12,094
$5,000 OR MORE	316,564	69,421	46,585	1,769
ALL OTHER NONPROFIT INSTITUTIONS				
TOTAL	599,485	135,635	68,797	7,112
LESS THAN $ 500	68,168	11,481	4,035	1,039
$ 500 - $ 999	76,637	18,145	6,754	792
$1,000 - $4,999	298,256	35,125	11,770	969
$5,000 OR MORE	156,424	70,884	46,238	4,312

TABLE B-17 GEOGRAPHIC DISTRIBUTION OF SELECTED FINANCIAL CHARACTERISTICS OF INDEPENDENT NONPROFIT INSTITUTIONS: 1973

(DOLLARS IN THOUSANDS)

	TOTAL EXPENDI-TURES	INTRAMURAL RESEARCH AND DEVELOPMENT		
		CURRENT		CAPITAL
		TOTAL	FEDERAL	
UNITED STATES, TOTAL	3,717,546	1,006,277	689,921	67,062
NEW ENGLAND..............	629,947	138,673	117,975	9,852
CONNECTICUT..........	65,053	3,496	1,943	140
MAINE................	10,123	3,402	2,806	658
MASSACHUSETTS........	497,536	129,817	112,785	9,044
NEW HAMPSHIRE........	0	0	0	0
RHODE ISLAND.........	52,357	1,777	331	10
VERMONT..............	4,878	181	110	0
MIDDLE ATLANTIC..........	1,072,152	182,575	104,945	10,102
NEW JERSEY...........	97,291	12,977	6,258	801
NEW YORK.............	760,078	124,670	66,837	7,488
PENNSYLVANIA.........	214,783	44,928	31,850	1,813
EAST NORTH CENTRAL.......	584,366	135,023	77,908	15,577
ILLINOIS.............	264,330	52,953	34,323	2,161
INDIANA..............	58,942	1,125	567	149
MICHIGAN.............	27,528	11,525	7,032	290
OHIO.................	228,728	68,220	34,978	12,851
WISCONSIN............	4,838	1,200	1,008	126
WEST NORTH CENTRAL.......	180,058	37,477	22,427	2,762
IOWA.................	1,153	1,153	46	0
KANSAS...............	30,988	1,519	542	75
MINNESOTA............	112,479	20,047	11,423	811
MISSOURI.............	35,438	14,758	10,416	1,876
NEBRASKA.............	0	0	0	0
NORTH DAKOTA.........	0	0	0	0
SOUTH DAKOTA.........	0	0	0	0
SOUTH ATLANTIC...........	526,593	143,566	94,624	6,215
DELAWARE.............	434	310	0	91
DISTRICT OF COLUMBIA	391,946	95,947	60,219	3,829
FLORIDA..............	40,144	3,669	1,293	168
GEORGIA..............	2,454	1,523	352	931
MARYLAND.............	54,716	7,423	4,189	387
NORTH CAROLINA.......	12,774	11,715	7,685	670
SOUTH CAROLINA.......	0	0	0	0
VIRGINIA.............	22,174	21,051	18,958	116
WEST VIRGINIA........	1,951	1,928	1,928	23
EAST SOUTH CENTRAL.......	20,950	15,500	9,119	1,301
ALABAMA..............	8,730	8,059	6,583	671
KENTUCKY.............	1,130	806	261	210
MISSISSIPPI	0	0	0	0
TENNESSEE............	11,040	6,635	2,275	420
WEST SOUTH CENTRAL.......	86,475	50,847	25,059	7,373
ARKANSAS.............	0	0	0	0
LOUISIANA............	27,563	4,434	2,640	53
OKLAHOMA.............	4,553	3,121	1,983	374
TEXAS................	54,359	43,292	20,436	6,946

RHODE ISLAND	52,357	1,777	331	10
VERMONT	4,878	181	110	0
MIDDLE ATLANTIC	1,072,152	182,575	104,945	10,102
NEW JERSEY	97,291	12,977	6,258	801
NEW YORK	760,078	124,670	66,837	7,488
PENNSYLVANIA	214,783	44,928	31,850	1,813
EAST NORTH CENTRAL	584,366	135,023	77,908	15,577
ILLINOIS	264,330	52,953	34,323	2,161
INDIANA	58,942	1,125	567	149
MICHIGAN	27,528	11,525	7,032	290
OHIO	228,728	68,220	34,978	12,851
WISCONSIN	4,838	1,200	1,008	126
WEST NORTH CENTRAL	180,058	37,477	22,427	2,762
IOWA	1,153	1,153	46	0
KANSAS	30,988	1,519	542	75
MINNESOTA	112,479	20,047	11,423	811
MISSOURI	35,438	14,758	10,416	1,876
NEBRASKA	0	0	0	0
NORTH DAKOTA	0	0	0	0
SOUTH DAKOTA	0	0	0	0
SOUTH ATLANTIC	526,593	143,566	94,624	6,215
DELAWARE	434	310	0	91
DISTRICT OF COLUMBIA	391,946	95,947	60,219	3,829
FLORIDA	40,144	3,669	1,293	168
GEORGIA	2,454	1,523	352	931
MARYLAND	54,716	7,423	4,189	387
NORTH CAROLINA	12,774	11,715	7,685	670
SOUTH CAROLINA	0	0	0	0
VIRGINIA	22,174	21,051	18,958	116
WEST VIRGINIA	1,951	1,928	1,928	23
EAST SOUTH CENTRAL	20,950	15,500	9,119	1,301
ALABAMA	8,730	8,059	6,583	671
KENTUCKY	1,180	806	261	210
MISSISSIPPI	0	0	0	0
TENNESSEE	11,040	6,635	2,275	420
WEST SOUTH CENTRAL	86,475	50,847	25,059	7,373
ARKANSAS	0	0	0	0
LOUISIANA	27,563	4,434	2,640	53
OKLAHOMA	4,553	3,121	1,983	374
TEXAS	54,359	43,292	20,436	6,946
MOUNTAIN	58,794	12,850	7,986	608
ARIZONA	8,297	1,632	944	89
COLORADO	26,450	5,437	1,652	426
IDAHO	0	0	0	0
MONTANA	0	0	0	0
NEVADA	0	0	0	0
NEW MEXICO	5,881	5,626	5,235	93
UTAH	18,166	155	155	0
WYOMING	0	0	0	0
PACIFIC	558,211	289,766	229,878	13,272
ALASKA	0	0	0	0
CALIFORNIA	434,742	233,478	187,335	6,643
HAWAII	13,003	2,908	1,464	341
OREGON	26,862	11,318	8,784	693
WASHINGTON	83,604	42,062	32,295	5,595

Table B-18. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of total intramural R&D expenditures: 1973

(Dollars in thousands)

Rank	Number: Scientists and engineers	Number: Technicians	Amount: Total R&D expenditures	Amount: Federally financed R&D expenditures	Amount: Capital expenditures	Percent of total: Scientists and engineers	Percent of total: Technicians	Percent of total: Total R&D expenditures	Percent of total: Federally financed R&D expenditures	Percent of total: Capital expenditures
Total, all institutions	26,336	29,145	$1,006,277	$689,921	$67,062	100.0	100.0	100.0	100.0	100.0
First 10	7,958	3,091	434,007	339,463	16,663	30.2	10.6	43.1	49.2	24.8
Second 10	2,531	3,531	112,882	81,269	5,415	9.6	12.1	11.2	11.8	8.1
Third 10	1,647	751	66,395	39,761	1,937	6.3	2.6	6.5	5.8	2.9
Fourth 10	1,755	687	53,713	31,932	7,985	6.7	2.4	5.3	4.6	11.9
Fifth 10	1,194	829	43,762	36,789	8,552	4.5	2.8	4.3	5.3	12.8
Total, first 50	15,085	8,889	710,759	529,214	40,552	57.3	30.5	70.6	76.7	60.5
Second 50	3,244	3,620	128,669	78,892	13,722	12.3	12.4	12.8	11.4	20.5
Total, first 100	18,329	12,509	839,428	608,106	54,274	69.6	42.9	83.4	88.1	80.9
All other institutions	8,007	16,636	166,849	81,815	12,788	30.4	57.1	16.6	11.9	19.1

Table B-19. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of federally funded intramural R&D expenditures: 1973

(Dollars in thousands)

Rank	Number: Scientists and engineers	Number: Technicians	Amount: Total R&D expenditures	Amount: Federally financed R&D expenditures	Amount: Capital expenditures	Percent of total: Scientists and engineers	Percent of total: Technicians	Percent of total: Total R&D expenditures	Percent of total: Federally financed R&D expenditures	Percent of total: Capital expenditures
Total, all institutions	26,336	29,145	$1,006,277	$689,921	$67,062	100.0	100.0	100.0	100.0	100.0
First 10	7,781	3,777	417,592	344,600	15,112	29.5	13.0	41.5	49.9	22.5
Second 10	2,806	3,137	126,058	79,055	6,355	10.7	10.8	12.5	11.5	9.5
Third 10	1,480	566	61,584	48,379	1,766	5.6	1.9	6.1	7.0	2.6
Fourth 10	1,490	716	52,934	38,849	3,101	5.7	2.5	5.3	5.6	4.6
Fifth 10	1,566	1,204	37,840	27,922	9,354	5.9	4.1	3.8	4.0	13.9
Total, first 50	15,123	9,400	696,008	538,805	35,688	57.4	32.3	69.2	78.1	53.2
Second 50	2,976	3,792	118,455	83,257	13,237	11.3	13.0	11.8	12.1	19.7
Total, first 100	18,099	13,192	814,463	622,062	48,925	68.7	45.3	80.9	90.2	73.0
All other institutions	8,237	15,953	191,814	67,859	18,127	31.3	54.7	19.1	9.8	27.0

Table B-20. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of total number of scientists and engineers employed: October 1973

(Dollars in thousands)

Rank	Number: Scientists		Amount: Total R&D	Amount: Federally financed R&D	Amount: Capital	Percent of total: Scientists		Percent of total: Total R&D	Percent of total: Federally financed R&D	Percent of total: Capital

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.7	2.4	5.3	4.6	11.9
Fifth 10	1,194	829	43,762	36,789	8,552	4.5	2.8	4.3	5.3	12.8
Total, first 50	15,085	8,889	710,759	529,214	40,552	57.3	30.5	70.6	76.7	60.5
Second 50	3,244	3.620	128,669	78,892	13,722	12.3	12.4	12.8	11.4	20.5
Total, first 100	18,329	12,509	839,428	608,106	54,274	69.6	42.9	83.4	88.1	80.9
All other institutions	8,007	16,636	166,849	81,815	12,788	30.4	57.1	16.6	11.9	19.1

Table B-19. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of federally funded intramural R&D expenditures: 1973

(Dollars in thousands)

Rank	Number		Amount			Percent of total				
	Scientists and engineers	Technicians	Total R&D expenditures	Federally financed R&D expenditures	Capital expenditures	Scientists and engineers	Technicians	Total R&D expenditures	Federally financed R&D expenditures	Capital expenditures
Total, all institutions	26,336	29,145	$1,006,277	$689,921	$67,062	100.0	100.0	100.0	100.0	100.0
First 10	7,781	3,777	417,592	344,600	15,112	29.5	13.0	41.5	49.9	22.5
Second 10	2,806	3,137	126,058	79,055	6,355	10.7	10.8	12.5	11.5	9.5
Third 10	1,480	566	61,584	48,379	1,766	5.6	1.9	6.1	7.0	2.6
Fourth 10	1,490	716	52,934	38,849	3,101	5.7	2.5	5.3	5.6	4.6
Fifth 10	1,566	1,204	37,840	27,922	9,354	5.9	4.1	3.8	4.0	13.9
Total, first 50	15,123	9,400	696,008	538,805	35,688	57.4	32.3	69.2	78.1	53.2
Second 50	2,976	3,792	118,455	83,257	13,237	11.3	13.0	11.8	12.1	19.7
Total, first 100	18,099	13,192	814,463	622,062	48,925	68.7	45.3	80.9	90.2	73.0
All other institutions	8,237	15,953	191,814	67,859	18,127	31.3	54.7	19.1	9.8	27.0

Table B-20. Selected manpower and financial characteristics of independent nonprofit institutions, ranked on the basis of total number of scientists and engineers employed: October 1973

(Dollars in thousands)

Rank	Number		Amount			Percent of total				
	Scientists and engineers	Technicians	Total R&D expenditures	Federally financed R&D expenditures	Capital expenditures	Scientists and engineers	Technicians	Total R&D expenditures	Federally financed R&D expenditures	Capital expenditures
Total, all institutions	26,336	29,145	$1,006,277	$689,921	$67,062	100.0	100.0	100.0	100.0	100.0
First 10	8,809	1,975	373,485	299,225	16,885	33.4	6.8	37.1	43.4	25.2
Second 10	3,055	4,270	93,277	61,742	4,385	11.6	14.7	9.3	8.9	6.5
Third 10	1,828	1,925	109,773	82,089	2,385	6.9	6.6	10.9	11.9	3.6
Fourth 10	1,462	1,405	54,844	39,920	2,711	5.6	4.8	5.5	5.8	4.0
Fifth 10	1,206	847	41,473	30,340	7,729	4.6	2.9	4.1	4.4	11.5
Total, first 50	16,360	10,422	672,852	513,316	34,095	62.1	35.8	66.9	74.4	50.8
Second 50	3,756	5,913	115,787	64,680	9,834	14.3	20.3	11.5	9.4	14.7
Total, first 100	20,116	16,335	788,369	577,996	43,929	76.4	56.0	78.3	83.8	65.5
All other institutions	6,220	12 810	217,908	111,925	23,133	23.6	44.0	21.7	16.2	34.5

Table B-21. Selected manpower and financial characteristics of science and engineering programs of research institutes: 1964-73

Characteristics	January 1965	January 1967	January 1970	October 1973
Total scientists and engineers	10,867	12,325	10,237	11,196
By type of activity in which primarily engaged:				
R&D	9,311	10,634	9,826	10,854
Other activities	1,556	1,691	411	342
By field:				
Engineers	2,078	2,478	2,294	2,438
Physical scientists	1,799	1,937	1,603	1,550
Environmental scientists	311	338	277	168
Mathematicians	1,537	1,594	553	581
Life scientists	3,109	3,462	3,160	3,292
Psychologists	823	998	532	481
Social scientists	1,210	1,518	1,818	2,686
By highest earned degree:				
Ph.D. or Sc.D.	NA	2,955	3,117	3,482
M.D., D.D.S., or D.V.M., etc.	NA	810	695	766
Master's	NA	2,924	2,706	2,864
Bachelor's or equivalent	NA	5,636	3,719	4,084
Technicians	4,567	4,670	4,794	4,986
	1964	1966 (thousands of dollars)	1969	1973
Current R&D expenditures	$274,730	$323,316	$365,171	$486,692
By source:				
Federal Government	183,457	211,568	226,750	310,029
State government	1,610	2,640	7,278	7,792
Local government	549	905	2,437	4,026
Foundations & voluntary health agencies	10,004	14,334	17,281	25,412
Industry	44,137	56,278	73,494	78,895
Institution's own funds	28,499	28,456	25,907	39,536
Other sources	6,474	9,135	12,024	21,002
By field:				
Engineering	75,198	85,198	113,654	97,689
Physical sciences	57,894	65,580	47,955	49,866
Environmental sciences	10,005	11,446	8,293	9,445
Mathematical sciences	14,881	16,384	14,461	34,100
Life sciences	80,317	90,276	100,889	158,905
Psychology	6,650	10,809	14,590	18,265
Social sciences	29,785	43,623	59,020	112,982
Other sciences, n.e.c.	—	—	6,309	5,440
Capital R&D expenditures	22,219	26,207	29,704	37,595

NA - Not available.

Table B-22. Selected manpower and financial characteristics of science and engineering programs of nonprofit-administered FFRDC's[1]: 1964-73

Characteristics	January 1965	January 1967	January 1970	October 1973
Total scientists and engineers	4,010	5,495	6,057	4,309
By type of activity in which primarily engaged:				
R&D	4,010	5,425	6,039	4,133
Other activities	—	70	18	176
By field:				
Engineers	2,046	2,708	2,629	2,161
Physical scientists	679	962	950	706
Environmental scientists	13	69	103	167
Mathematicians	675	733	759	617
Life scientists	64	84	153	185
Psychologists	45	133	281	49
Social scientists	488	806	1,182	424
By highest earned degree:				
Ph.D. or Sc.D.	NA	1,121	1,341	1,018
M.D., D.D.S., or D.V.M., etc.	NA	36	54	68
Master's	NA	1,878	2,195	1,633
Bachelor's or equivalent	NA	2,460	2,467	1,590
Technicians	1,500	1,952	1,546	955

	1964	1966 (thousands of dollars)	1969	1973
Current R&D expenditures	* $168,793	$213,950	$277,314	$220,630
By source:				
Federal Government	167,415	210,888	262,564	204,635
State government	2	311	477	1,578
Local government	2	208	2,912	2,327
Foundations & voluntary health agencies	57	37	1,423	1,241
Industry	—	450	3,419	6,096
Institution's own funds	1,256	2,017	5,003	3,860
Other sources	61	39	1,516	893
By field:				
Engineering	113,018	119,127	138,459	141,468
Physical sciences	24,253	41,127	46,561	21,125
Environmental sciences	463	2,971	5,045	9,159
Mathematical sciences	14,821	21,988	20,195	15,221
Life sciences	5,117	7,232	14,073	12,718
Psychology	1,037	2,464	5,717	1,387
Social sciences	10,084	19,041	32,697	13,491
Other sciences, n.e.c.	—	—	14,567	6,061
Capital R&D expenditures	—	—	4,418	5,738

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[1] Federally Funded Research and Development Centers.

NA - Not available.

Table B-23. Selected manpower and financial characteristics of science and engineering programs of voluntary hospitals: 1964-73

Characteristics	January 1965[1]	January 1967[1]	January 1970	October 1973
Total scientists and engineers	4,056	4,564	4,331	6,495
By type of activity in which primarily engaged:				
R&D	3,654	4,112	3,902	5,555
Other activities	402	452	429	940
By field:				
Engineers	109	122	116	216
Physical scientists	159	179	169	194
Environmental scientists	6	7	7	109
Mathematicians	37	42	41	88
Life scientists	3,324	3,740	3,545	5,020
Psychologists	211	238	227	492
Social scientists	210	236	226	376
By highest earned degree:				
Ph.D. or Sc.D.	970	1,089	1,036	1,585
M.D., D.D.S., or D.V.M., etc.	1,891	2,129	2,019	3,156
Master's	472	532	507	655
Bachelor's or equivalent	723	814	768	1,099
Technicians	13,004	14,005	18,123	22,110
	1964[1]	1966[1]	1969	1973
		(thousands of dollars)		
Current R&D expenditures	$95,738	$114,997	$129,553	$163,320
By source:				
Federal Government	59,526	71,510	84,495	106,460
State government	809	622	763	1,620
Local government	170	554	193	1,662
Foundations & voluntary health agencies	11,425	9,857	12,959	14,312
Industry	1,350	1,944	1,773	3,647
Institution's own funds	17,920	25,162	24,222	31,091
Other sources	4,538	5,348	5,148	4,528
By field:				
Engineering	113	136	153	1,714
Physical sciences	1,583	1,900	2,137	4,660
Environmental sciences	58	70	79	41
Mathematical sciences	547	657	738	2,064
Life sciences	90,496	108,700	122,376	144,431
Psychology	2,363	2,839	3,217	4,589
Social sciences	307	369	487	5,605
Other sciences, n.e.c.	271	326	366	216
Capital R&D expenditures	13,783	16,535	15,938	16,617

[1] Statistics for earlier years derived from surveys conducted by the National Institutes of Health.

Table B-24. Selected manpower and financial characteristics of science and engineering programs of all other nonprofit institutions; by institutional type: 1973

Characteristics	All other nonprofit institutions	Societies and academies of science	Private foundations	Science exhibitors	Trade associations and agricultural cooperatives	Other nonprofit institutions
Total scientists and engineers	4,336	1,306	236	395	709	1,690
By type of activity in which primarily engaged:						
R&D	2,587	644	232	350	399	962
Other activities	1,749	662	4	45	310	728
By field:						
Engineers	731	159	7	3	524	38
Physical scientists	658	500	24	12	108	14
Environmental scientists ...	182	104	35	31	12	—
Mathematicians	328	98	—	—	11	219
Life scientists	1,408	342	130	236	30	670
Psychologists	508	53	9	14	1	431
Social scientists	521	50	31	99	23	318
By highest earned degree:						
Ph.D. or Sc.D.	1,344	398	161	180	98	507
M.D., D.D.S., or D.V.M., etc.	231	58	6	7	—	160
Master's	1,106	344	15	83	150	514
Bachelor's or equivalent ...	1,655	506	54	125	461	509
Technicians	1,364	207	124	228	201	604
	(thousands of dollars)					
Current R&D expenditures	$135,635	$61,848	$13,510	$7,907	$26,353	$26,017
By source:						
Federal Government	68,797	44,442	1,872	2,415	7,550	12,518
State government	1,880	1,186	78	434	141	41
Local government	410	—	—	56	—	354
Foundations & voluntary health agencies	10,262	3,196	233	569	10	6,254
Industry	16,314	1,935	252	36	13,869	222
Institution's own funds	34,075	8,788	11,021	3,373	4,434	6,459
Other sources	3,897	2,301	54	1,024	349	169
By field:						
Engineering	36,040	15,401	94	—	20,398	147
Physical sciences	16,558	12,559	1,949	591	1,459	—
Environmental sciences ...	10,671	5,318	2,425	1,938	990	—
Mathematical sciences	740	364	2	—	149	225
Life sciences	53,404	26,378	6,280	3,624	1,877	15,245
Psychology	7,292	284	357	193	—	6,458
Social sciences	10,930	1,544	2,403	1,561	1,480	3,942
Other sciences, n.e.c.	—	—	—	—	—	—
Capital R&D expenditures	7,112	1,162	3,580	332	1,601	437

Table B-25. Selected manpower and financial characteristics of science and engineering programs of all other nonprofit institutions[1]: 1964-73

Characteristics	January 1965	January 1967	January 1970	October 1973
Total scientists and engineers	2,413	3,058	2,976	3,627
By type of activity in which primarily engaged:				
R&D	1,488	1,821	1,732	2,188
Other activities	925	1,237	1,244	1,439
By field:				
Engineers	96	148	174	207
Physical scientists	388	477	461	550
Environmental scientists	96	135	90	170
Mathematicians	138	122	196	317
Life scientists	1,103	1,146	992	1,378
Psychologists	254	507	383	507
Social scientists	338	523	680	418
By highest earned degree:				
Ph.D. or Sc.D.	NA	1,194	1,060	1,246
M.D., D.D.S., or D.V.M., etc.	NA	272	278	231
Master's	NA	780	715	956
Bachelor's or equivalent	NA	812	923	1,194
Technicians	570	553	798	1,163
	1964	1966	1969	1973
		(thousands of dollars)		
Current R&D expenditures	$42,716	$61,121	$74,239	$109,282
By source:				
Federal Government	18,029	25,947	36,460	61,247
State government	795	1,331	1,330	1,739
Local government	220	651	524	410
Foundations & voluntary health agencies	2,852	5,071	5,892	10,252
Industry	881	1,004	1,117	2,445
Institution's own funds	18,115	25,509	24,250	29,641
Other sources	1,824	1,608	4,666	3,548
By field:				
Engineering	5,124	4,378	5,437	15,642
Physical sciences	4,902	6,158	9,087	15,099
Environmental sciences	2,341	2,540	3,353	9,681
Mathematical sciences	1,223	633	105	591
Life sciences	20,729	24,500	25,851	51,527
Psychology	2,154	7,996	6,044	7,292
Social sciences	6,243	8,237	11,294	9,450
Other sciences, n.e.c.	—	6,679	13,068	—
Capital R&D expenditures	1,573	3,341	2,847	5,511

[1] Includes societies and academies of science, private foundations, science exhibitors, and other nonprofit institutions, n.e.c.; but excludes trade associations and agricultural cooperatives, for which data prior to 1973 are not available.

NA - Not available.

APPENDIX C

Reproduction of Covering Letter, Summary Questionnaires, and Instructions

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

JAN 16 1974

Dear Sir:

The National Science Foundation requests your cooperation in its Survey of R&D Performance of Independent Nonprofit Institutions, 1973. The enclosed survey questionnaire seeks information on the employment of scientific and technical personnel and the financing of intramural R&D performance in the sciences and engineering.

This survey is part of NSF's continuing program of surveys and studies designed to assemble information on the national resources allocated to the advancement of science and technology. Similar surveys are conducted in other sectors of the economy, including industry, universities and colleges, and government. Such information is needed by the National Science Foundation, other Government agencies, and all other national groups concerned with formulating and evaluating policies and programs to strengthen the scientific capabilities of the Nation.

Also enclosed is a self-addressed postcard requesting the name and title of the official designated to complete the questionnaire for your institution. The prompt return of this postcard to the National Science Foundation will insure that any inquiries regarding your institution's participation in the survey will be directed to the appropriate official. If any questions arise regarding the interpretation of the survey questionnaire, please write or call J. G. Huckenpahler at the Foundation's Division of Science Resources Studies (Area Code 202, 282-7790).

Your cooperation in this survey will be appreciated.

Sincerely yours,

Richard M. Berry

Richard M. Berry, Study Director
Universities and Nonprofit
Institutions Studies Group
Division of Science Resources Studies

Enclosures

NATIONAL SCIENC
WASHINGTON,

Dear Respondent:

Following the mail-out of the Survey o
Independent Nonprofit Institutions, 19
the National Science Foundation was in
the official designated to complete th
your institution. Our records indicat
yet received the completed questionnai

The National Science Foundation would
the requested information as soon as p
data will be available for inclusion i
Board's annual report to the President
latest "status of science" indicators.

In any instances where exact data are
mates will be satisfactory. For your
copies of the survey questionnaire and
with a self-addressed franked envelope

Your continued cooperation in reportin
will be greatly appreciated. If you h
please address them to me or Mr. J. G.
reached on Area Code 202, 282-7790.

Sincerely your

Richard

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NCE FOUNDATION
ON, D.C. 20550

JAN 16 1974

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NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

Dear Respondent:

Following the mail-out of the Survey of R&D Activities of Independent Nonprofit Institutions, 1973 in January 1974, the National Science Foundation was informed that you were the official designated to complete the questionnaire for your institution. Our records indicate that we have not yet received the completed questionnaire.

The National Science Foundation would appreciate receiving the requested information as soon as possible, so that 1973 data will be available for inclusion in the National Science Board's annual report to the President which highlights the latest "status of science" indicators.

In any instances where exact data are not available, estimates will be satisfactory. For your convenience, additional copies of the survey questionnaire and instructions, together with a self-addressed franked envelope, are enclosed.

Your continued cooperation in reporting timely data to NSF will be greatly appreciated. If you have any questions, please address them to me or Mr. J. G. Huckenpahler. We may be reached on Area Code 202, 282-7790.

Sincerely yours,

Richard M. Berry

Richard M. Berry, Study Director
Universities and Nonprofit
  Institutions Studies Group
Division of Science Resources Studies

Enclosures

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

Dear Administrator:

My letter of January 16, 1974, requested your assistance in the National Science Foundation's Survey of R&D Activities of Independent Nonprofit Institutions, 1973. Since we have not yet received a reply from your institution, I am writing again to seek your support.

As I indicated in my earlier letter, the objective of the survey is to obtain summary data on the manpower and financial resources allocated to scientific activities by the Nation's independent nonprofit institutions. This survey is the only source of such information, which will be compared and combined with similar data from other sectors of the economy to arrive at total figures reflecting the magnitude and utilization of the Nation's science resources. Therefore, your participation is important to the success of this survey.

If exact manpower and financial data are not available, reasonably accurate estimates will be satisfactory. Further, if you are unable to answer all of the questions, please furnish as much of the requested information as you can. Your estimate, based on your own knowledge of your institution, will be better than any we could make.

In the event that the survey questionnaires and instructions failed to reach you, additional copies are enclosed. In order that any future inquiries regarding the survey may be directed to the official responsible for completing the questionnaire, a self-addressed postcard for his name and title is also enclosed. If your institution had no intramural R&D expenditures during 1973, a note to this effect on the postcard will suffice.

Any questions that might arise regardin
to Mr. J. G. Huckenpahler at the Founda
Resources Studies (Area Code 202, 282-7
participated in the earlier surveys in
forms submitted are available upon requ

Your assistance in the survey is import
be greatly appreciated.

Sincerely y

Richard M.
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CIENCE FOUNDATION
NGTON, D.C. 20550

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s name and title is also enclosed.
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ostcard will suffice.

Any questions that might arise regarding the survey may be directed to Mr. J. G. Huckenpahler at the Foundation's Division of Science Resources Studies (Area Code 202, 282-7790). If your institution participated in the earlier surveys in the series, copies of the forms submitted are available upon request.

Your assistance in the survey is important; your cooperation will be greatly appreciated.

Sincerely yours,

Richard M. Berry

Richard M. Berry, Study Director
Universities and Nonprofit
Institutions Studies Group
Division of Science Resources Studies

Enclosures

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

ALL INSTITUTIONS (444)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

Please check the *one* box which *most closely* identifies your institution:

1. ☒ Research institute
2. ☒ Federally Funded Research and Development Center
3. ☒ Voluntary nonprofit hospital
4. ☒ Professional or technical society, or academy of science
5. ☒ Private foundation
6. ☒ Science exhibitor
7. ☒ Trade association or agricultural cooperative
8. ☒ Other (please specify)

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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	26,336	23,823	2,513
(1) Number primarily in R&D	3111	23,129	20,904	2,225
(2) Number primarily in other activities	3112	3,207	2,919	288

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

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2. ☒ Federally Funded Research and Development Center
3. ☒ Voluntary nonprofit hospital
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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

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OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	26,336	23,823	2,513
(1) Number primarily in R&D	*3111*	23,129	20,904	2,225
(2) Number primarily in other activities	*3112*	3,207	2,919	288
b. Technicians	*3120*	29,415	25,298	4,117
c. Other employees	*3130*	215,838	179,576	36,262
d. Total (sum of a to c)	*3100*	271,589	228,697	42,892

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	5,546	318	4,769	459
(1) Ph.D. or Sc.D.	3211	921	82	814	25
(2) M.D., D.D.S., D.V.M., etc.	3212	18	7	10	1
(3) Master's	3213	1,967	91	1,799	77
(4) Bachelor's or equivalent	3214	2,640	138	2,146	356
b. Physical scientists (total)	3220	3,140	574	2,053	481
(1) Ph.D. or Sc.D.	3221	1,148	191	801	156
(2) M.D., D.D.S., D.V.M., etc.	3222	58	54	3	1
(3) Master's	3223	684	96	480	108
(4) Bachelor's or equivalent	3224	1,218	233	769	216
c. Environmental scientists (total)	3230	626	158	411	57
(1) Ph.D. or Sc.D.	3231	196	30	161	5
(2) M.D., D.D.S., D.V.M., etc.	3232	69	66	3	–
(3) Master's	3233	176	25	124	27
(4) Bachelor's or equivalent	3234	185	37	123	25
d. Mathematicians (total)	3240	1,614	248	1,191	175
(1) Ph.D. or Sc.D.	3241	314	34	267	13
(2) M.D., D.D.S., D.V.M., etc.	3242	8	5	1	2
(3) Master's	3243	552	72	436	44
(4) Bachelor's or equivalent	3244	740	137	487	116
e. Life scientists (total)	3250	9,905	8,116	865	924
(1) Ph.D. or Sc.D.	3251	2,809	2,242	420	147
(2) M.D., D.D.S., D.V.M., etc.	3252	3,897	3,359	48	490
(3) Master's	3253	1,004	792	104	108
(4) Bachelor's or equivalent	3254	2,195	1,723	293	179
f. Psychologists (total)	3260	1,530	559	513	458
(1) Ph.D. or Sc.D.	3261	895	329	300	266
(2) M.D., D.D.S., D.V.M., etc.	3262	124	121	3	–
(3) Master's	3263	313	68	122	123
(4) Bachelor's or equivalent	3264	198	41	88	69
g. Social scientists (total)	3270	4,007	786	2,568	653
(1) Ph.D. or Sc.D.	3271	1,146	223	860	63
(2) M.D., D.D.S., D.V.M., etc.	3272	47	26	6	15
(3) Master's	3273	1,562	280	998	284
(4) Bachelor's or equivalent	3274	1,252	257	704	291
h. Total Headcount (sum of a to g)	3200	26,336	10,759	12,370	3,207

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	2,137	1,701	436
b. Physical science technicians	3320			

	3220	3,140	574	2,053	481
(1) Ph.D. or Sc.D.	3221	1,148	191	801	156
(2) M.D., D.D.S., D.V.M., etc.	3222	58	54	3	1
(3) Master's	3223	684	96	480	108
(4) Bachelor's or equivalent	3224	1,218	233	769	216
c. Environmental scientists (total)	3230	626	158	411	57
(1) Ph.D. or Sc.D.	3231	196	30	161	5
(2) M.D., D.D.S., D.V.M., etc.	3232	69	66	3	–
(3) Master's	3233	176	25	124	27
(4) Bachelor's or equivalent	3234	185	37	123	25
d. Mathematicians (total)	3240	1,614	248	1,191	175
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(2) M.D., D.D.S., D.V.M., etc.	3242	8	5	1	2
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e. Life scientists (total)	3250	9,905	8,116	865	924
(1) Ph.D. or Sc.D.	3251	2,809	2,242	420	147
(2) M.D., D.D.S., D.V.M., etc.	3252	3,897	3,359	48	490
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(1) Ph.D. or Sc.D.	3261	895	329	300	266
(2) M.D., D.D.S., D.V.M., etc.	3262	124	121	3	–
(3) Master's	3263	313	68	122	123
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(1) Ph.D. or Sc.D.	3271	1,146	223	860	63
(2) M.D., D.D.S., D.V.M., etc.	3272	47	26	6	15
(3) Master's	3273	1,562	280	998	284
(4) Bachelor's or equivalent	3274	1,252	257	704	291
h. Total Headcount (sum of a to g)	3200	26,336	10,759	12,370	3,207

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	2,137	1,701	436
b. Physical science technicians	3320	1,024	833	191
c. Environmental science technicians	3330	301	247	54
d. Mathematics technicians	3340	434	258	176
e. Biological and agricultural science technicians	3350	3,083	1,589	1,494
f. Medical and health-related technicians	3360	21,369	6,131	15,238
g. Psychology technicians	3370	256	180	76
h. Social science technicians	3380	811	536	275
i. Total (sum of a to h)	3300	29,415	11,475	17,940

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 1,006,277	3590-2	$ 400,054
b. Capital R&D expenditures	3490-3	67,062	3590-3	38,022
c. All other expenditures	3490-4	2,644,207	3590-4	2,187,261
d. Total (sum of a to c)	3490-1	$ 3,717,546	3590-1	$ 2,625,337

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 689,921	3510	$ 267,433	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	12,870	3520	3,264	
c. Local government	3430	8,425	3530	2,706	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	51,227	3540	31,245	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	104,952	3550	13,219	
f. Institution's own funds	3460	108,562	3560	68,502	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	30,320	3570	13,685	
h. Total (sum of a to g)	3400	$ 1,006,277	3500	$ 400,054	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 1,006,277	3590-2	$ 400,054
b. Capital R&D expenditures	3490-3	67,062	3590-3	38,022
c. All other expenditures	3490-4	2,644,207	3590-4	2,187,261
d. Total (sum of a to c)	3490-1	$ 3,717,546	3590-1	$ 2,625,337

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 689,921	3510	$ 267,433	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	12,870	3520	3,264	
c. Local government	3430	8,425	3530	2,706	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	51,227	3540	31,245	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	104,952	3550	13,219	
f. Institution's own funds	3460	108,562	3560	68,502	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	30,320	3570	13,685	
h. Total (sum of a to g)	3400	$ 1,006,277	3500	$ 400,054	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 357,182	$ 218,074
b. Applied research	3620	353,335	233,526
c. Development	3630	295,760	238,321
d. Total (sum of a to c)	3600	$ 1,006,277	$ 689,921

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 276,911	$ 11,630	3810	$ 220,884	$ 8,539
b. Physical sciences (total)	3720	$ 92,209	$ 16,810	3820	$ 60,490	$ 11,778
(1) Astronomy	3721	6,561	-	3821	4,274	-
(2) Chemistry	3722	40,084	11,257	3822	24,118	7,338
(3) Physics	3723	29,759	3,445	3823	21,159	2,410
(4) Other physical sciences, NEC	3724	15,805	2,108	3824	10,939	2,030
c. Environmental sciences (total)	3730	$ 29,316	$ 5,398	3830	$ 16,049	$ 3,848
d. Mathematical sciences (total)	3740	$ 52,125	$ 6,630	3840	$ 41,633	$ 5,672
(1) Mathematics (exclude computer sciences)	3741	25,043	1,207	3841	20,192	1,119
(2) Computer sciences	3742	27,082	5,423	3842	21,441	4,553
e. Life sciences (total)	3750	$ 369,458	$ 330,094	3850	$ 240,825	$ 218,799
(1) Biological (include agricultural sciences)	3751	169,030	139,453	3851	106,781	92,909
(2) Clinical medical	3752	173,532	165,110	3852	119,831	112,638
(3) Other life sciences, NEC	3753	26,896	25,531	3853	14,213	13,252
f. Psychology (total)	3760	$ 31,533	$ 10,867	3860	$ 21,283	$ 7,478
g. Social sciences (total)	3770	$ 143,008	$ 17,635	3870	$ 79,419	$ 10,776
(1) Economics	3771	50,027	928	3871	18,997	808
(2) Political science	3772	12,949	20	3872	8,411	12
(3) Sociology	3773	26,830	11,726	3873	17,288	8,440
(4) Other social sciences, NEC	3774	53,202	4,961	3874	34,723	1,516
h. Other sciences, NEC (total)	3780	$ 11,717	$ 990	3880	$ 9,338	$ 543
i. Total (sum of a to h)	3700	$ 1,006,277	$ 400,054	3800	$ 689,921	$ 267,433

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

(4) Other physical sciences, NEC	3724	15,805	2,108	3824	10,939	2,030
c. Environmental sciences (total)	3730	$ 29,316	$ 5,398	3830	$ 16,049	$ 3,848
d. Mathematical sciences (total)	3740	$ 52,125	$ 6,630	3840	$ 41,633	$ 5,672
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Name of person who prepared *manpower section*

Title and Telephone

Name of person who prepared *financial section* (if different from above)

Title and Telephone

NAME OF INSTITUTION

Date

ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

RESEARCH INSTITUTES (186)

Please indicate below the number of any item that should not be published with institutional identification:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

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3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)________________

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(Includes items 1 to 3 of the survey questionnaire)

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Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	*3110*	11,196	10,236	960
(1) Number primarily in R&D	*3111*	10,854	9,919	935

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

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Please check the *one* box which *most closely* identifies your institution:

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Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	11,196	10,236	960
(1) Number primarily in R&D	*3111*	10,854	9,919	935
(2) Number primarily in other activities	*3112*	342	317	25
b. Technicians	*3120*	4,986	4,219	767
c. Other employees	*3130*	13,812	12,183	1,629
d. Total (sum of a to c)	*3100*	29,994	26,638	3,356

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	2,438	109	2,289	40
(1) Ph.D. or Sc.D.	3211	440	30	408	2
(2) M.D., D.D.S., D.V.M., etc.	3212	16	5	10	1
(3) Master's	3213	832	35	790	7
(4) Bachelor's or equivalent	3214	1,150	39	1,081	30
b. Physical scientists (total)	3220	1,550	342	1,182	26
(1) Ph.D. or Sc.D.	3221	528	98	425	5
(2) M.D., D.D.S., D.V.M., etc.	3222	7	4	3	–
(3) Master's	3223	339	58	277	4
(4) Bachelor's or equivalent	3224	676	182	477	17
c. Environmental scientists (total)	3230	168	39	129	–
(1) Ph.D. or Sc.D.	3231	38	3	35	–
(2) M.D., D.D.S., D.V.M., etc.	3232	3	–	3	–
(3) Master's	3233	55	13	42	–
(4) Bachelor's or equivalent	3234	72	23	49	–
d. Mathematicians (total)	3240	581	121	441	19
(1) Ph.D. or Sc.D.	3241	165	18	146	1
(2) M.D., D.D.S., D.V.M., etc.	3242	4	2	–	2
(3) Master's	3243	171	29	135	7
(4) Bachelor's or equivalent	3244	241	72	160	9
e. Life scientists (total)	3250	3,292	2,886	381	25
(1) Ph.D. or Sc.D.	3251	1,262	1,061	192	9
(2) M.D., D.D.S., D.V.M., etc.	3252	717	678	31	8
(3) Master's	3253	331	296	34	1
(4) Bachelor's or equivalent	3254	982	851	124	7
f. Psychologists (total)	3260	481	129	317	35
(1) Ph.D. or Sc.D.	3261	270	63	184	23
(2) M.D., D.D.S., D.V.M., etc.	3262	12	9	3	–
(3) Master's	3263	116	35	70	11
(4) Bachelor's or equivalent	3264	83	22	60	1
g. Social scientists (total)	3270	2,686	433	2,056	197
(1) Ph.D. or Sc.D.	3271	779	78	681	20
(2) M.D., D.D.S., D.V.M., etc.	3272	7	1	6	–
(3) Master's	3273	1,020	156	805	59
(4) Bachelor's or equivalent	3274	880	198	564	118
h. Total Headcount (sum of a to g)	3200	11,196	4,059	6,795	342

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	1,374	1,135	239

(1) Ph.D. or Sc.D.	3221	528	98	425	5
(2) M.D., D.D.S., D.V.M., etc.	3222	7	4	3	–
(3) Master's	3223	339	58	277	4
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(4) Bachelor's or equivalent	3254	982	851	124	7
f. Psychologists (total)	3260	481	129	317	35
(1) Ph.D. or Sc.D.	3261	270	63	184	23
(2) M.D., D.D.S., D.V.M., etc.	3262	12	9	3	–
(3) Master's	3263	116	35	70	11
(4) Bachelor's or equivalent	3264	83	22	60	1
g. Social scientists (total)	3270	2,686	433	2,056	197
(1) Ph.D. or Sc.D.	3271	779	78	681	20
(2) M.D., D.D.S., D.V.M., etc.	3272	7	1	6	–
(3) Master's	3273	1,020	156	805	59
(4) Bachelor's or equivalent	3274	880	198	564	118
h. Total Headcount (sum of a to g)	3200	11,196	4,059	6,795	342

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	1,374	1,135	239
b. Physical science technicians	3320	433	406	27
c. Environmental science technicians	3330	83	83	–
d. Mathematics technicians	3340	160	148	12
e. Biological and agricultural science technicians	3350	1,024	1,011	13
f. Medical and health-related technicians	3360	1,509	1,045	464
g. Psychology technicians	3370	37	37	–
h. Social science technicians	3380	366	340	26
i. Total (sum of a to h)	3300	4,986	4,205	781

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 486,692	3590-2	$ 174,465
b. Capital R&D expenditures	3490-3	37,595	3590-3	21,264
c. All other expenditures	3490-4	137,929	3590-4	106,102
d. Total (sum of a to c)	3490-1	$ 662,216	3590-1	$ 301,831

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 310,029	3510	$ 120,555	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	7,792	3520	1,577	
c. Local government	3430	4,026	3530	854	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	25,412	3540	9,416	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	78,895	3550	6,951	
f. Institution's own funds	3460	39,536	3560	27,975	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	21,002	3570	7,137	
h. Total (sum of a to g)	3400	$ 486,692	3500	$ 174,465	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		(1)		related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 486,692	3590-2	$ 174,465
b. Capital R&D expenditures	3490-3	37,595	3590-3	21,264
c. All other expenditures	3490-4	137,929	3590-4	106,102
d. Total (sum of a to c)	3490-1	$ 662,216	3590-1	$ 301,831

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 310,029	3510	$ 120,555	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	7,792	3520	1,577	
c. Local government	3430	4,026	3530	854	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	25,412	3540	9,416	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	78,895	3550	6,951	
f. Institution's own funds	3460	39,536	3560	27,975	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	21,002	3570	7,137	
h. Total (sum of a to g)	3400	$ 486,692	3500	$ 174,465	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 183,207	$ 113,073
b. Applied research	3620	208,884	133,205
c. Development	3630	94,601	63,751
d. Total (sum of a to c)	3600	$ 486,692	$ 310,029

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 97,689	$ 1,765	3810	$ 64,642	$ 1,027
b. Physical sciences (total)	3720	$ 49,866	$ 7,154	3820	$ 30,793	$ 5,523
(1) Astronomy	3721	2,267	–	3821	1,925	–
(2) Chemistry	3722	24,302	6,118	3822	14,800	4,684
(3) Physics	3723	14,462	530	3823	9,346	378
(4) Other physical sciences, NEC	3724	8,835	506	3824	4,722	461
c. Environmental sciences (total)	3730	$ 9,445	$ 3,176	3830	$ 5,254	$ 2,468
d. Mathematical sciences (total)	3740	$ 34,100	$ 4,065	3840	$ 26,045	$ 3,387
(1) Mathematics (exclude computer sciences)	3741	19,685	985	3841	15,013	954
(2) Computer sciences	3742	14,415	3,080	3842	11,032	2,433
e. Life sciences (total)	3750	$ 158,905	$ 145,403	3850	$ 103,162	$ 96,881
(1) Biological (include agricultural sciences)	3751	103,850	91,936	3851	69,585	64,398
(2) Clinical medical	3752	43,798	43,574	3852	26,004	25,870
(3) Other life sciences, NEC	3753	11,257	9,893	3853	7,573	6,613
f. Psychology (total)	3760	$ 18,265	$ 4,943	3860	$ 14,078	$ 4,170
g. Social sciences (total)	3770	$ 112,982	$ 7,185	3870	$ 62,696	$ 6,556
(1) Economics	3771	41,737	928	3871	12,394	808
(2) Political science	3772	7,562	20	3872	3,780	12
(3) Sociology	3773	17,930	6,001	3873	14,019	5,548
(4) Other social sciences, NEC	3774	45,753	236	3874	32,503	188
h. Other sciences, NEC (total)	3780	$ 5,440	$ 774	3880	$ 3,359	$ 543
i. Total (sum of a to h)	3700	$ 486,692	$ 174,465	3800	$ 310,029	$ 120,555

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

[illegible]	[illegible]	8,835	506	3824	4,722	461
c. Environmental sciences (total)	3730	$ 9,445	$ 3,176	3830	$ 5,254	$ 2,468
d. Mathematical sciences (total)	3740	$ 34,100	$ 4,065	3840	$ 26,045	$ 3,387
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REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*		Title and Telephone
Name of person who prepared *financial section* (if different from above)		Title and Telephone
NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

FEDERALLY FUNDED RESEARCH AND
DEVELOPMENT CENTERS (7)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

PLEASE RETURN THIS COPY

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

Please check the *one* box which *most closely* identifies your institution:
1. ☐ Research institute
2. ☒ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	3110	4,309	4,209	100
(1) Number primarily in R&D	3111	4,133	4,033	100
(2) Number primarily in other activities . .	3112	176	176	–

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

PLEASE RETURN THIS COPY

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1. ☐ Research institute
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4. ☐ Professional or technical society, or academy of science
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7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)____________

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

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OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	3110	4,309	4,209	100
(1) Number primarily in R&D	3111	4,133	4,033	100
(2) Number primarily in other activities . .	3112	176	176	-
b. Technicians	3120	955	922	33
c. Other employees	3130	4,457	4,223	234
d. Total (sum of a to c)	3100	9,721	9,354	367

Item 2 Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	2,161	19	2,116	26
(1) Ph.D. or Sc.D.	3211	362	7	354	1
(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
(3) Master's	3213	920	8	907	5
(4) Bachelor's or equivalent	3214	879	4	855	20
b. Physical scientists (total)	3220	706	11	681	14
(1) Ph.D. or Sc.D.	3221	304	7	296	1
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	165	2	161	2
(4) Bachelor's or equivalent	3224	237	2	224	11
c. Environmental scientists (total)	3230	167	7	124	36
(1) Ph.D. or Sc.D.	3231	53	6	45	2
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	55	–	40	15
(4) Bachelor's or equivalent	3234	59	1	39	19
d. Mathematicians (total)	3240	617	–	617	–
(1) Ph.D. or Sc.D.	3241	111	–	111	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	256	–	256	–
(4) Bachelor's or equivalent	3244	250	–	250	–
e. Life scientists (total)	3250	185	73	112	–
(1) Ph.D. or Sc.D.	3251	47	8	39	–
(2) M.D., D.D.S., D.V.M., etc.	3252	68	59	9	–
(3) Master's	3253	24	4	20	–
(4) Bachelor's or equivalent	3254	46	2	44	–
f. Psychologists (total)	3260	49	4	45	–
(1) Ph.D. or Sc.D.	3261	24	2	22	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	13	1	12	–
(4) Bachelor's or equivalent	3264	12	1	11	–
g. Social scientists (total)	3270	424	–	324	100
(1) Ph.D. or Sc.D.	3271	117	–	111	6
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	200	–	131	69
(4) Bachelor's or equivalent	3274	107	–	82	25
h. Total Headcount (sum of a to g)	3200	4,309	114	4,019	176

Item 3 Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	332	315	17

(1) Ph.D. or Sc.D.	3221	304	7	296	1
(2) M.D., D.D.S., D.V.M., etc.	3222	--	–	–	–
(3) Master's	3223	165	2	161	2
(4) Bachelor's or equivalent	3224	237	2	224	11
c. Environmental scientists (total)	3230	167	7	124	36
(1) Ph.D. or Sc.D.	3231	53	6	45	2
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	55	–	40	15
(4) Bachelor's or equivalent	3234	59	1	39	19
d. Mathematicians (total)	3240	617	–	617	–
(1) Ph.D. or Sc.D.	3241	111	–	111	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	256	–	256	–
(4) Bachelor's or equivalent	3244	250	–	250	–
e. Life scientists (total)	3250	185	73	112	–
(1) Ph.D. or Sc.D.	3251	47	8	39	–
(2) M.D., D.D.S., D.V.M., etc.	3252	68	59	9	–
(3) Master's	3253	24	4	20	–
(4) Bachelor's or equivalent	3254	46	2	44	–
f. Psychologists (total)	3260	49	4	45	–
(1) Ph.D. or Sc.D.	3261	24	2	22	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	13	1	12	–
(4) Bachelor's or equivalent	3264	12	1	11	–
g. Social scientists (total)	3270	424	–	324	100
(1) Ph.D. or Sc.D.	3271	117	–	111	6
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
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h. Total Headcount (sum of a to g)	3200	4,309	114	4,019	176

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	332	315	17
b. Physical science technicians	3320	226	212	14
c. Environmental science technicians	3330	49	39	10
d. Mathematics technicians	3340	77	77	–
e. Biological and agricultural science technicians	3350	59	59	–
f. Medical and health-related technicians	3360	204	204	–
g. Psychology technicians	3370	–	–	–
h. Social science technicians	3380	8	8	–
i. Total (sum of a to h)	3300	955	914	41

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

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All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 220,630	3590-2	$ 8,420
b. Capital R&D expenditures	3490-3	5,738	3590-3	203
c. All other expenditures	3490-4	4,175	3590-4	–
d. Total (sum of a to c)	3490-1	$ 230,543	3590-1	$ 8,623

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 204,635	3510	$ 7,992	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,578	3520	67	
c. Local government	3430	2,327	3530	190	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	1,241	3540	21	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	6,096	3550	–	
f. Institution's own funds	3460	3,860	3560	150	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	893	3570	–	
h. Total (sum of a to g)	3400	$ 220,630	3500	$ 8,420	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 220,630	3590-2	$ 8,420
b. Capital R&D expenditures	3490-3	5,738	3590-3	203
c. All other expenditures	3490-4	4,175	3590-4	-
d. Total (sum of a to c)	3490-1	$ 230,543	3590-1	$ 8,623

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 204,635	3510	$ 7,992	Total in 5a, column 1, should equal 7i, column 3.
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c. Local government	3430	2,327	3530	190	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	1,241	3540	21	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	6,096	3550	-	
f. Institution's own funds	3460	3,860	3560	150	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	893	3570	-	
h. Total (sum of a to g)	3400	$ 220,630	3500	$ 8,420	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 39,205	$ 31,235
b. Applied research	3620	22,815	22,341
c. Development	3630	158,610	151,059
d. Total (sum of a to c)	3600	$ 220,630	$ 204,635

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 141,468	$ 1,105	3810	$ 136,672	$ 931
b. Physical sciences (total)	3720	$ 21,125	$ 535	3820	$ 17,578	$ 463
(1) Astronomy	3721	2,732	-	3821	2,164	-
(2) Chemistry	3722	3,448	535	3822	2,718	463
(3) Physics	3723	11,564	-	3823	9,781	-
(4) Other physical sciences, NEC	3724	3,381	-	3824	2,915	-
c. Environmental sciences (total)	3730	$ 9,159	$ 371	3830	$ 7,269	$ 347
d. Mathematical sciences (total)	3740	$ 15,221	$ 121	3840	$ 13,240	$ 109
(1) Mathematics (exclude computer sciences)	3741	5,068	-	3841	4,999	-
(2) Computer sciences	3742	10,153	121	3842	8,241	109
e. Life sciences (total)	3750	$ 12,718	$ 6,069	3850	$ 11,097	$ 5,949
(1) Biological (include agricultural sciences)	3751	6,649	-	3851	5,148	-
(2) Clinical medical	3752	6,069	6,069	3852	5,949	5,949
(3) Other life sciences, NEC	3753	-	-	3853	-	-
f. Psychology (total)	3760	$ 1,387	$ 167	3860	$ 1,134	$ 141
g. Social sciences (total)	3770	$ 13,941	$ 52	3870	$ 11,666	$ 52
(1) Economics	3771	7,524	-	3871	6,543	-
(2) Political science	3772	5,371	-	3872	4,631	-
(3) Sociology	3773	333	52	3873	333	52
(4) Other social sciences, NEC	3774	263	-	3874	159	-
h. Other sciences, NEC (total)	3780	$ 6,061	$ -	3880	$ 5,979	$ -
i. Total (sum of a to h)	3700	$ 220,630	$ 8,420	3800	$ 204,635	$ 7,992

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

physical sciences, NEC .	3724	3,381	–	3824	2,915	–
c. Environmental sciences (total) . .	3730	$ 9,159	$ 371	3830	$ 7,269	$ 347
d. Mathematical sciences (total) . . .	3740	$ 15,221	$ 121	3840	$ 13,240	$ 109
(1) Mathematics (exclude computer sciences)	3741	5,068	–	3841	4,999	–
(2) Computer sciences	3742	10,153	121	3842	8,241	109
e. Life sciences (total)	3750	$ 12,718	$ 6,069	3850	$ 11,097	$ 5,949
(1) Biological (include agricultural sciences) . . .	3751	6,649	–	3851	5,148	–
(2) Clinical medical	3752	6,069	6,069	3852	5,949	5,949
(3) Other life sciences, NEC . .	3753	–	–	3853	–	–
f. Psychology (total)	3760	$ 1,387	$ 167	3860	$ 1,134	$ 141
g. Social sciences (total)	3770	$ 13,941	$ 52	3870	$ 11,666	$ 52
(1) Economics	3771	7,524	–	3871	6,543	–
(2) Political science	3772	5,371	–	3872	4,631	–
(3) Sociology	3773	333	52	3873	333	52
(4) Other social sciences, NEC . .	3774	263	–	3874	159	–
h. Other sciences, NEC (total)	3780	$ 6,061	$ –	3880	$ 5,979	$ –
i. Total (sum of a to h)	3700	$ 220,630	$ 8,420	3800	$ 204,635	$ 7,992

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*

Title and Telephone

Name of person who prepared *financial section* (if different from above)

Title and Telephone

NAME OF INSTITUTION

Date

ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

VOLUNTARY NONPROFIT HOSPITALS
(123)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☒ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)__________

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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	3110	6,495	5,295	1,200
(1) Number primarily in R&D	3111	5,555	4,550	1,005
(2) Number primarily in other activities	3112			

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

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Please check the *one* box which *most closely* identifies your institution:

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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1. Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	6,495	5,295	1,200
(1) Number primarily in R&D	3111	5,555	4,550	1,005
(2) Number primarily in other activities	3112	940	745	195
b. Technicians	3120	22,110	18,989	3,121
c. Other employees	3130	181,097	148,332	32,765
d. Total (sum of a to c)	3100	209,702	172,616	37,086

Item 2 Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	216	163	2	51
(1) Ph.D. or Sc.D.	3211	42	38	–	4
(2) M.D., D.D.S., D.V.M., etc.	3212	2	2	–	–
(3) Master's	3213	56	45	2	9
(4) Bachelor's or equivalent	3214	116	78	–	38
b. Physical scientists (total)	3220	194	187	–	7
(1) Ph.D. or Sc.D.	3221	72	71	–	1
(2) M.D., D.D.S., D.V.M., etc.	3222	43	43	–	–
(3) Master's	3223	36	32	–	4
(4) Bachelor's or equivalent	3224	43	41	–	2
c. Environmental scientists (total)	3230	109	108	–	1
(1) Ph.D. or Sc.D.	3231	19	19	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	66	66	–	–
(3) Master's	3233	13	12	–	1
(4) Bachelor's or equivalent	3234	11	11	–	–
d. Mathematicians (total)	3240	88	75	1	12
(1) Ph.D. or Sc.D.	3241	12	11	–	1
(2) M.D., D.D.S., D.V.M., etc.	3242	1	–	1	–
(3) Master's	3243	29	27	–	2
(4) Bachelor's or equivalent	3244	46	37	–	9
e. Life scientists (total)	3250	5,020	4,412	19	589
(1) Ph.D. or Sc.D.	3251	1,029	942	11	76
(2) M.D., D.D.S., D.V.M., etc.	3252	2,914	2,492	8	414
(3) Master's	3253	291	252	–	39
(4) Bachelor's or equivalent	3254	786	726	–	60
f. Psychologists (total)	3260	492	380	–	112
(1) Ph.D. or Sc.D.	3261	324	234	–	90
(2) M.D., D.D.S., D.V.M., etc.	3262	107	107	–	–
(3) Master's	3263	47	26	–	21
(4) Bachelor's or equivalent	3264	14	13	–	1
g. Social scientists (total)	3270	376	208	–	168
(1) Ph.D. or Sc.D.	3271	87	77	–	10
(2) M.D., D.D.S., D.V.M., etc.	3272	23	8	–	15
(3) Master's	3273	183	92	–	91
(4) Bachelor's or equivalent	3274	83	31	–	52
h. Total Headcount (sum of a to g)	3200	6,495	5,533	22	940

Item 3 Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	232	83	149
b. Physical science technicians	3320	265	134	131

(1) Ph.D. or Sc.D.	3221	72	71	–	1
(2) M.D., D.D.S., D.V.M., etc.	3222	43	43	–	–
(3) Master's	3223	36	32	–	4
(4) Bachelor's or equivalent	3224	43	41	–	2
c. Environmental scientists (total)	3230	109	108	–	1
(1) Ph.D. or Sc.D.	3231	19	19	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	66	66	–	–
(3) Master's	3233	13	12	–	1
(4) Bachelor's or equivalent	3234	11	11	–	–
d. Mathematicians (total)	3240	88	75	1	12
(1) Ph.D. or Sc.D.	3241	12	11	–	1
(2) M.D., D.D.S., D.V.M., etc.	3242	1	–	1	–
(3) Master's	3243	29	27	–	2
(4) Bachelor's or equivalent	3244	46	37	–	9
e. Life scientists (total)	3250	5,020	4,412	19	589
(1) Ph.D. or Sc.D.	3251	1,029	942	11	76
(2) M.D., D.D.S., D.V.M., etc.	3252	2,914	2,492	8	414
(3) Master's	3253	291	252	–	39
(4) Bachelor's or equivalent	3254	786	726	–	60
f. Psychologists (total)	3260	492	380	–	112
(1) Ph.D. or Sc.D.	3261	324	234	–	90
(2) M.D., D.D.S., D.V.M., etc.	3262	107	107	–	–
(3) Master's	3263	47	26	–	21
(4) Bachelor's or equivalent	3264	14	13	–	1
g. Social scientists (total)	3270	376	208	–	168
(1) Ph.D. or Sc.D.	3271	87	77	–	10
(2) M.D., D.D.S., D.V.M., etc.	3272	23	8	–	15
(3) Master's	3273	183	92	–	91
(4) Bachelor's or equivalent	3274	83	31	–	52
h. Total Headcount (sum of a to g)	3200	6,495	5,533	22	940

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	232	83	149
b. Physical science technicians	3320	265	134	131
c. Environmental science technicians	3330	63	28	35
d. Mathematics technicians	3340	78	13	65
e. Biological and agricultural science technicians	3350	1,767	327	1,440
f. Medical and health-related technicians	3360	19,227	4,487	14,740
g. Psychology technicians	3370	173	97	76
h. Social science technicians	3380	305	91	214
i. Total (sum of a to h)	3300	22,110	5,260	16,850

PART II — FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 163,320	3590-2	$ 162,231
b. Capital R&D expenditures	3490-3	16,[illegible]17	3590-3	16,306
c. All other expenditures	3490-4	2,045,365	3590-4	1,931,565
d. Total (sum of a to c)	3490-1	$ 2,225,302	3590-1	$ 2,110,102

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 106,460	3510	$ 105,615	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,620	3520	1,620	
c. Local government	3430	1,662	3530	1,662	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	14,312	3540	14,256	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	3,647	3550	3,645	
f. Institution's own funds	3460	31,091	3560	30,905	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	4,528	3570	4,528	
h. Total (sum of a to g)	3400	$ 163,320	3500	$ 162,231	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 163,320	3590-2	$ 162,231
b. Capital R&D expenditures	3490-3	16,617	3590-3	16,306
c. All other expenditures	3490-4	2,045,365	3590-4	1,931,565
d. Total (sum of a to c)	3490-1	$ 2,225,302	3590-1	$ 2,110,102

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 106,460	3510	$ 105,615	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,620	3520	1,620	
c. Local government	3430	1,662	3530	1,662	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	14,312	3540	14,256	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	3,647	3550	3,645	
f. Institution's own funds	3460	31,091	3560	30,905	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	4,528	3570	4,528	
h. Total (sum of a to g)	3400	$ 163,320	3500	$ 162,231	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 93,410	$ 59,686
b. Applied research	3620	52,748	35,802
c. Development	3630	17,162	10,972
d. Total (sum of a to c)	3600	$ 163,320	$ 106,460

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 1,714	$ 1,714	3810	$ 943	$ 943
b. Physical sciences (total)	3720	$ 4,660	$ 4,660	3820	$ 2,544	$ 2,544
(1) Astronomy	3721	–	–	3821	–	–
(2) Chemistry	3722	1,964	1,964	3822	512	512
(3) Physics	3723	2,696	2,696	3823	2,032	2,032
(4) Other physical sciences, NEC	3724	–	–	3824	–	–
c. Environmental sciences (total)	3730	$ 41	$ 41	3830	$ 20	$ 20
d. Mathematical sciences (total)	3740	$ 2,064	$ 2,064	3840	$ 1,890	$ 1,890
(1) Mathematics (exclude computer sciences)	3741	160	160	3841	160	160
(2) Computer sciences	3742	1,904	[illegible],904	3842	1,730	1,730
e. Life sciences (total)	3750	$ 144,431	$ 143,342	3850	$ 95,776	$ 94,931
(1) Biological (include agricultural sciences)	3751	40,496	39,423	3851	25,778	24,949
(2) Clinical medical	3752	98,118	98,102	3852	67,467	67,451
(3) Other life sciences, NEC	3753	5,817	5,817	3853	2,531	2,531
f. Psychology (total)	3760	$ 4,589	$ 4,589	3860	$ 2,447	$ 2,447
g. Social sciences (total)	3770	$ 5,605	$ 5,605	3870	$ 2,840	$ 2,840
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	5,605	5,605	3873	2,840	2,840
(4) Other social sciences, NEC	3774	–	–	3874	–	–
h. Other sciences, NEC (total)	3780	$ 216	$ 216	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 163,320	$ 162,231	3800	$ 106,460	$ 105,615

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

(4) Other physical sciences, NEC	3724	–	–	3824	–	–
c. Environmental sciences (total)	3730	$ 41	$ 41	3830	$ 20	$ 20
d. Mathematical sciences (total)	3740	$ 2,064	$ 2,064	3840	$ 1,890	$ 1,890
(1) Mathematics (exclude computer sciences)	3741	160	160	3841	160	160
(2) Computer sciences	3742	1,904	1,904	3842	1,730	1,730
e. Life sciences (total)	3750	$ 144,431	$143,342	3850	$ 95,776	$ 94,931
(1) Biological (include agricultural sciences)	3751	40,496	39,423	3851	25,773	24,949
(2) Clinical medical	3752	98,118	98,102	3852	67,467	67,451
(3) Other life sciences, NEC	3753	5,817	5,817	3853	2,531	2,531
f. Psychology (total)	3760	$ 4,589	$ 4,589	3860	$ 2,447	$ 2,447
g. Social sciences (total)	3770	$ 5,605	$ 5,605	3870	$ 2,840	$ 2,840
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	5,605	5,605	3873	2,840	2,840
(4) Other social sciences, NEC	3774	–	–	3874	–	–
h. Other sciences, NEC (total)	3780	$ 216	$ 216	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 163,320	$162,231	3800	$ 106,460	$ 105,615

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*		Title and Telephone
Name of person who prepared *financial section* (if different from above)		Title and Telephone
NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

ALL OTHER NONPROFIT INSTITUTIONS
(128)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

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Please check the *one* box which *most closely* identifies your institution:
1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☒ Professional or technical society, or academy of science
5. ☒ Private foundation
6. ☒ Science exhibitor
7. ☒ Trade association or agricultural cooperative
8. ☒ Other (please specify)

PLEASE RETURN THIS COPY

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	3110	4,336	4,083	253
(1) Number primarily in R&D	3111	2,587	2,402	185
(2) Number primarily in other activities	3112	1,749	1,681	68

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

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5. ☒ Private foundation
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7. ☒ Trade association or agricultural cooperative
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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	4,336	4,083	253
(1) Number primarily in R&D	*3111*	2,587	2,492	185
(2) Number primarily in other activities	*3112*	1,749	1,681	68
b. Technicians	*3120*	1,364	1,168	196
c. Other employees	*3130*	16,472	14,838	1,634
d. Total (sum of a to c)	*3100*	22,172	20,089	2,083

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	731	27	362	342
(1) Ph.D. or Sc.D.	3211	77	7	52	18
(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
(3) Master's	3213	159	3	100	56
(4) Bachelor's or equivalent	3214	495	17	210	268
b. Physical scientists (total)	3220	658	34	190	434
(1) Ph.D. or Sc.D.	3221	244	15	80	149
(2) M.D., D.D.S., D.V.M., etc.	3222	8	7	–	1
(3) Master's	3223	144	4	42	98
(4) Bachelor's or equivalent	3224	262	8	68	186
c. Environmental scientists (total)	3230	182	4	158	20
(1) Ph.D. or Sc.D.	3231	86	2	81	3
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	53	–	42	11
(4) Bachelor's or equivalent	3234	43	2	35	6
d. Mathematicians (total)	3240	328	52	132	144
(1) Ph.D. or Sc.D.	3241	26	5	10	11
(2) M.D., D.D.S., D.V.M., etc.	3242	3	3	–	–
(3) Master's	3243	96	16	45	35
(4) Bachelor's or equivalent	3244	203	28	77	98
e. Life scientists (total)	3250	1,408	745	353	310
(1) Ph.D. or Sc.D.	3251	471	231	178	62
(2) M.D., D.D.S., D.V.M., etc.	3252	198	130	–	68
(3) Master's	3253	358	240	50	68
(4) Bachelor's or equivalent	3254	381	144	125	112
f. Psychologists (total)	3260	508	46	151	311
(1) Ph.D. or Sc.D.	3261	277	30	94	153
(2) M.D., D.D.S., D.V.M., etc.	3262	5	5	–	–
(3) Master's	3263	137	6	40	91
(4) Bachelor's or equivalent	3264	89	5	17	67
g. Social scientists (total)	3270	521	145	188	188
(1) Ph.D. or Sc.D.	3271	163	68	68	27
(2) M.D., D.D.S., D.V.M., etc.	3272	17	17	–	–
(3) Master's	3273	159	32	62	65
(4) Bachelor's or equivalent	3274	182	28	58	96
h. Total Headcount (sum of a to g)	3200	4,336	1,053	1,534	1,749

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	199	168	31
b. Physical science technicians	3320	100	81	19

b. Physical scientists (total)	3220	658	34	190	434
(1) Ph.D. or Sc.D.	3221	244	15	80	149
(2) M.D., D.D.S., D.V.M., etc.	3222	8	7	–	1
(3) Master's	3223	144	4	42	98
(4) Bachelor's or equivalent	3224	262	8	68	186
c. Environmental scientists (total)	3230	182	4	158	20
(1) Ph.D. or Sc.D.	3231	86	2	81	3
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	53	–	42	11
(4) Bachelor's or equivalent	3234	43	2	35	6
d. Mathematicians (total)	3240	328	52	132	144
(1) Ph.D. or Sc.D.	3241	26	5	10	11
(2) M.D., D.D.S., D.V.M., etc.	3242	3	3	–	–
(3) Master's	3243	96	16	45	35
(4) Bachelor's or equivalent	3244	203	28	77	98
e. Life scientists (total)	3250	1,408	745	353	310
(1) Ph.D. or Sc.D.	3251	471	231	178	62
(2) M.D., D.D.S., D.V.M., etc.	3252	198	130	–	68
(3) Master's	3253	358	240	50	68
(4) Bachelor's or equivalent	3254	381	144	125	112
f. Psychologists (total)	3260	508	46	151	311
(1) Ph.D. or Sc.D.	3261	277	30	94	153
(2) M.D., D.D.S., D.V.M., etc.	3262	5	5	–	–
(3) Master's	3263	137	6	40	91
(4) Bachelor's or equivalent	3264	89	5	17	67
g. Social scientists (total)	3270	521	145	188	188
(1) Ph.D. or Sc.D.	3271	163	68	68	27
(2) M.D., D.D.S., D.V.M., etc.	3272	17	17	–	–
(3) Master's	3273	159	32	62	65
(4) Bachelor's or equivalent	3274	182	28	58	96
h. Total Headcount (sum of a to g)	3200	4,336	1,053	1,534	1,749

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	199	168	31
b. Physical science technicians	3320	100	81	19
c. Environmental science technicians	3330	106	97	9
d. Mathematics technicians	3340	119	20	99
e. Biological and agricultural science technicians	3350	233	192	41
f. Medical and health-related technicians	3360	429	395	34
g. Psychology technicians	3370	46	46	–
h. Social science technicians	3380	132	97	35
i. Total (sum of a to h)	3300	1,364	1,096	268

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 135,635	3590-2	$ 54,938
b. Capital R&D expenditures	3490-3	7,112	3590-3	249
c. All other expenditures	3490-4	456,738	3590-4	149,594
d. Total (sum of a to c)	3490-1	$ 599,485	3590-1	$ 204,781

Item 5 Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)
a. Federal Government	3410	$ 68,797	3510	$ 33,271
b. State government	3420	1,880	3520	–
c. Local government	3430	410	3530	–
d. Foundations and voluntary health agencies	3440	10,262	3540	7,552
e. Industry	3450	16,314	3550	2,623
f. Institution's own funds	3460	34,075	3560	9,472
g. Other sources	3470	3,897	3570	2,020
h. Total (sum of a to g)	3400	$ 135,635	3500	$ 54,938

Total in 5a, column 1, should equal 7i, column 3.

Total in 5a, column 2, should equal 7i, column 4.

Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.

Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.

Item 6 Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 135,635	3590-2	$ 54,938
b. Capital R&D expenditures	3490-3	7,112	3590-3	249
c. All other expenditures	3490-4	456,738	3590-4	149,594
d. Total (sum of a to c)	3490-1	$ 599,485	3590-1	$ 204,781

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 68,797	3510	$ 33,271	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,880	3520	-	
c. Local government	3430	410	3530	-	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	10,262	3540	7,552	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	16,314	3550	2,623	
f. Institution's own funds	3460	34,075	3560	9,472	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	3,897	3570	2,020	
h. Total (sum of a to g)	3400	$ 135,635	3500	$ 54,938	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 41,360	$ 14,080
b. Applied research	3620	68,888	42,178
c. Development	3630	25,387	12,539
d. Total (sum of a to c)	3600	$ 135,635	$ 68,797

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 36,040	$ 7,046	3810	$ 18,627	$ 5,638
b. Physical sciences (total)	3720	$ 16,558	$ 4,461	3820	$ 9,575	$ 3,248
(1) Astronomy	3721	1,562	–	3821	185	–
(2) Chemistry	3722	10,370	2,640	3822	6,088	1,679
(3) Physics	3723	1,037	219	3823	–	–
(4) Other physical sciences, NEC	3724	3,589	1,602	3824	3,302	1,569
c. Environmental sciences (total)	3730	$ 10,671	$ 1,810	3830	$ 3,506	$ 1,013
d. Mathematical sciences (total)	3740	$ 740	$ 380	3840	$ 458	$ 286
(1) Mathematics (exclude computer sciences)	3741	130	62	3841	20	5
(2) Computer sciences	3742	610	318	3842	438	281
e. Life sciences (total)	3750	$ 53,404	$ 35,280	3850	$ 30,790	$ 21,308
(1) Biological (include agricultural sciences)	3751	18,035	8,094	3851	6,270	3,562
(2) Clinical medical	3752	25,547	17,365	3852	20,411	13,368
(3) Other life sciences, NEC	3753	9,822	9,821	3853	4,109	4,108
f. Psychology (total)	3760	$ 7,292	$ 1,168	3860	$ 3,624	$ 720
g. Social sciences (total)	3770	$ 10,930	$ 4,793	3870	$ 2,217	$ 1,328
(1) Economics	3771	766	–	3871	60	–
(2) Political science	3772	16	–	3872	–	–
(3) Sociology	3773	2,962	68	3873	96	–
(4) Other social sciences, NEC	3774	7,186	4,725	3874	2,061	1,328
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 135,635	$ 54,938	3800	$ 68,797	$ 33,271

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

				3824	3,302	1,569
c. Environmental sciences (total) . .	3730	$ 10,671	$ 1,810	3830	$ 3,506	$ 1,013
d. Mathematical sciences (total) . . .	3740	$ 740	$ 380	3840	$ 458	$ 286
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(1) Economics	3771	766	–	3871	60	–
(2) Political science	3772	16	–	3872	–	–
(3) Sociology	3773	2,962	68	3873	96	–
(4) Other social sciences, NEC . .	3774	7,186	4,725	3874	2,061	1,328
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 135,635	$ 54,938	3800	$ 68,797	$ 33,271

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*		Title and Telephone
Name of person who prepared *financial section* (if different from above)		Title and Telephone
NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

PROFESSIONAL AND TECHNICAL
SOCIETIES AND ACADEMIES OF
SCIENCE (29)

Please indicate below the number of any item that should not be published with institutional identification:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☒ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)__________

PLEASE RETURN THIS COPY

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	1,306	1,261	45
(1) Number primarily in R&D	3111	644	603	41

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

Please check the *one* box which *most closely* identifies your institution:
1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☒ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)____________________

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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	1,306	1,261	45
(1) Number primarily in R&D	*3111*	644	603	41
(2) Number primarily in other activities	*3112*	662	658	4
b. Technicians	*3120*	207	182	25
c. Other employees	*3130*	3,521	3,082	439
d. Total (sum of a to c)	*3100*	5,034	4,525	509

Item 2	Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)					
	FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
	a. Engineers (total)	*3210*	159	1	113	45
	(1) Ph.D. or Sc.D.	*3211*	26	–	15	11
	(2) M.D., D.D.S., D.V.M., etc.	*3212*	–	–	–	–
	(3) Master's	*3213*	45	–	31	14
	(4) Bachelor's or equivalent	*3214*	88	1	67	20
	b. Physical scientists (total)	*3220*	500	26	61	413
	(1) Ph.D. or Sc.D.	*3221*	179	9	24	146
	(2) M.D., D.D.S., D.V.M., etc.	*3222*	8	7	–	1
	(3) Master's	*3223*	117	4	18	95
	(4) Bachelor's or equivalent	*3224*	196	6	19	171
	c. Environmental scientists (total)	*3230*	104	–	90	14
	(1) Ph.D. or Sc.D.	*3231*	36	–	33	3
	(2) M.D., D.D.S., D.V.M., etc.	*3232*	–	–	–	–
	(3) Master's	*3233*	40	–	32	8
	(4) Bachelor's or equivalent	*3234*	28	–	25	3
	d. Mathematicians (total)	*3240*	98	9	69	20
	(1) Ph.D. or Sc.D.	*3241*	2	1	1	–
	(2) M.D., D.D.S., D.V.M., etc.	*3242*	–	–	–	–
	(3) Master's	*3243*	37	3	29	5
	(4) Bachelor's or equivalent	*3244*	59	5	39	15
	e. Life scientists (total)	*3250*	342	171	74	97
	(1) Ph.D. or Sc.D.	*3251*	117	44	35	38
	(2) M.D., D.D.S., D.V.M., etc.	*3252*	50	43	–	7
	(3) Master's	*3253*	91	50	16	25
	(4) Bachelor's or equivalent	*3254*	84	34	23	27
	f. Psychologists (total)	*3260*	53	3	5	45
	(1) Ph.D. or Sc.D.	*3261*	22	3	5	14
	(2) M.D., D.D.S., D.V.M., etc.	*3262*	–	–	–	–
	(3) Master's	*3263*	2	–	–	2
	(4) Bachelor's or equivalent	*3264*	29	–	–	29
	g. Social scientists (total)	*3270*	50	7	15	38
	(1) Ph.D. or Sc.D.	*3271*	16	5	8	3
	(2) M.D., D.D.S.. D.V.M., etc.	*3272*	–	–	–	–
	(3) Master's	*3273*	12	2	5	5
	(4) Bachelor's or equivalent	*3274*	22	–	2	20
	h. Total Headcount (sum of a to g)	*3200*	1,306	217	427	662

Item 3	Technicians, by field and function in which *primarily* employed, October 1973				
	FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
	a. Engineering technicians	*3310*	17	2	15

b. Physical scientists (total)	3220	500	26	61	413
(1) Ph.D. or Sc.D.	3221	179	9	24	146
(2) M.D., D.D.S., D.V.M., etc.	3222	8	7	–	1
(3) Master's	3223	117	4	18	95
(4) Bachelor's or equivalent	3224	196	6	19	171
c. Environmental scientists (total)	3230	104	–	90	14
(1) Ph.D. or Sc.D.	3231	36	–	33	3
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	40	–	32	8
(4) Bachelor's or equivalent	3234	28	–	25	3
d. Mathematicians (total)	3240	98	9	69	20
(1) Ph.D. or Sc.D.	3241	2	1	1	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	37	3	29	5
(4) Bachelor's or equivalent	3244	59	5	39	15
e. Life scientists (total)	3250	342	171	74	97
(1) Ph.D. or Sc.D.	3251	117	44	35	38
(2) M.D., D.D.S., D.V.M., etc.	3252	50	43	–	7
(3) Master's	3253	91	50	16	25
(4) Bachelor's or equivalent	3254	84	34	23	27
f. Psychologists (total)	3260	53	3	5	45
(1) Ph.D. or Sc.D.	3261	22	3	5	14
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	2	–	–	2
(4) Bachelor's or equivalent	3264	29	–	–	29
g. Social scientists (total)	3270	50	7	15	38
(1) Ph.D. or Sc.D.	3271	16	5	8	3
(2) M.D., D.D.S.. D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	12	2	5	5
(4) Bachelor's or equivalent	3274	22	–	2	20
h. Total Headcount (sum of a to g)	3200	1,306	217	427	662

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	17	2	15
b. Physical science technicians	3320	20	14	6
c. Environmental science technicians	3330	79	72	7
d. Mathematics technicians	3340	1	1	–
e. Biological and agricultural science technicians	3350	43	37	6
f. Medical and health-related technicians	3360	38	32	6
g. Psychology technicians	3370	3	3	–
h. Social science technicians	3380	6	3	3
i. Total (sum of a to h)	3300	207	164	43

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 61,848	3590-2	$ 28.373
b. Capital R&D expenditures	3490-3	1,162	3590-3	26
c. All other expenditures	3490-4	75,627	3590-4	18,812
d. Total (sum of a to c)	3490-1	$ 138,637	3590-1	$ 47,211

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 44,442	3510	$ 21,522	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,186	3520	–	
c. Local government	3430	–	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	3,196	3540	1,479	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	1,935	3550	197	
f. Institution's own funds	3460	8,788	3560	3,445	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	2,301	3570	1,730	
h. Total (sum of a to g)	3400	$ 61,848	3500	$ 28,373	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 61,848	3590-2	$ 28.373
b. Capital R&D expenditures	3490-3	1,162	3590-3	26
c. All other expenditures	3490-4	75,627	3590-4	18,812
d. Total (sum of a to c)	3490-1	$ 138,637	3590-1	$ 47,211

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 44,442	3510	$ 21,522	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	1,186	3520	–	
c. Local government	3430	–	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	3,196	3540	1,479	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	1,935	3550	197	
f. Institution's own funds	3460	8,788	3560	3,445	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	2,301	3570	1,730	
h. Total (sum of a to g)	3400	$ 61,848	3500	$ 28,373	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 5,336	$ 1,707
b. Applied research	3620	46,917	37,010
c. Development	3630	9,595	5,725
d. Total (sum of a to c)	3600	$ 61,848	$ 44,442

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 15,401	$ 6,869	3810	$ 11,808	$ 5,605
b. Physical sciences (total)	3720	$ 12,559	$ 4,001	3820	$ 8,433	$ 2,906
(1) Astronomy	3721	–	–	3821	–	–
(2) Chemistry	3722	8,574	2,189	3822	5,136	1,342
(3) Physics	3723	603	216	3823	–	–
(4) Other physical sciences, NEC	3724	3,382	1,596	3824	3,297	1,564
c. Environmental sciences (total)	3730	$ 5,318	$ 1,272	3830	$ 2,649	$ 1,010
d. Mathematical sciences (total)	3740	$ 364	$ 153	3840	$ 219	$ 102
(1) Mathematics (exclude computer sciences)	3741	69	25	3841	–	–
(2) Computer sciences	3742	295	128	3842	219	102
e. Life sciences (total)	3750	$ 26,378	$ 14,967	3850	$ 19,803	$ 11,052
(1) Biological (include agricultural sciences)	3751	4,633	1,405	3851	2,903	1,196
(2) Clinical medical	3752	17,302	9,120	3852	15,094	8,051
(3) Other life sciences, NEC	3753	4,443	4,442	3853	1,806	1,805
f. Psychology (total)	3760	$ 284	$ –	3860	$ 253	$ –
g. Social sciences (total)	3770	$ 1,544	$ 1,111	3870	$ 1,277	$ 847
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	–	–	3873	–	–
(4) Other social sciences, NEC	3774	1,544	1,111	3874	1,277	847
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 61,848	$ 28,373	3800	$ 44,442	$ 21,522

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*

Title and Telephone

		603	216		–	–
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(1) Economics	3771	–	–	3871	–	–
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Name of person who prepared *manpower section*		Title and Telephone
Name of person who prepared *financial section* (if different from above)		Title and Telephone
NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

PRIVATE FOUNDATIONS (15)

Please indicate below the number of any item that should not be published with institutional identification:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

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Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☒ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)____________

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1. Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	236	223	13
(1) Number primarily in R&D	3111	232	221	11
(2) Number primarily in other activities	3112	4	2	2

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	*3110*	236	223	13
(1) Number primarily in R&D	*3111*	232	221	11
(2) Number primarily in other activities	*3112*	4	2	2
b. Technicians	*3120*	124	123	1
c. Other employees	*3130*	285	261	24
d. Total (sum of a to c)	*3100*	645	607	38

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	7	5	1	1
(1) Ph.D. or Sc.D.	3211	4	3	–	1
(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
(3) Master's	3213	1	–	1	–
(4) Bachelor's or equivalent	3214	2	2	–	–
b. Physical scientists (total)	3220	24	–	24	–
(1) Ph.D. or Sc.D.	3221	24	–	24	–
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	–	–	–	–
(4) Bachelor's or equivalent	3224	–	–	–	–
c. Environmental scientists (total)	3230	35	–	35	–
(1) Ph.D. or Sc.D.	3231	33	–	33	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	2	–	2	–
(4) Bachelor's or equivalent	3234	–	–	–	–
d. Mathematicians (total)	3240	–	–	–	–
(1) Ph.D. or Sc.D.	3241	–	–	–	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	–	–	–	–
(4) Bachelor's or equivalent	3244	–	–	–	–
e. Life scientists (total)	3250	130	67	63	–
(1) Ph.D. or Sc.D.	3251	75	39	36	–
(2) M.D., D.D.S., D.V.M., etc.	3252	6	6	–	–
(3) Master's	3253	6	3	3	–
(4) Bachelor's or equivalent	3254	43	19	24	–
f. Psychologists (total)	3260	9	6	3	–
(1) Ph.D. or Sc.D.	3261	8	6	2	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	1	–	1	–
(4) Bachelor's or equivalent	3264	–	–	–	–
g. Social scientists (total)	3270	31	–	28	3
(1) Ph.D. or Sc.D.	3271	17	–	14	3
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	5	–	5	–
(4) Bachelor's or equivalent	3274	9	–	9	–
h. Total Headcount (sum of a to g)	3200	236	78	154	4

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (3)
a. Engineering technicians	3310	8	8	–
b. Physical science technicians	3320	42	42	–

(1) Ph.D. or Sc.D.	3221	24	–	24	–
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	–	–	–	–
(4) Bachelor's or equivalent	3224	–	–	–	–
c. Environmental scientists (total)	3230	35	–	35	–
(1) Ph.D. or Sc.D.	3231	33	–	33	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	2	–	2	–
(4) Bachelor's or equivalent	3234	–	–	–	–
d. Mathematicians (total)	3240	–	–	–	–
(1) Ph.D. or Sc.D.	3241	–	–	–	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	–	–	–	–
(4) Bachelor's or equivalent	3244	–	–	–	–
e. Life scientists (total)	3250	130	67	63	–
(1) Ph.D. or Sc.D.	3251	75	39	36	–
(2) M.D., D.D.S., D.V.M., etc.	3252	6	6	–	–
(3) Master's	3253	6	3	3	–
(4) Bachelor's or equivalent	3254	43	19	24	–
f. Psychologists (total)	3260	9	6	3	–
(1) Ph.D. or Sc.D.	3261	8	6	2	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	1	–	1	–
(4) Bachelor's or equivalent	3264	–	–	–	–
g. Social scientists (total)	3270	31	–	28	3
(1) Ph.D. or Sc.D.	3271	17	–	14	3
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	5	–	5	–
(4) Bachelor's or equivalent	3274	9	–	9	–
n. Total Headcount (sum of a to g)	3200	236	78	154	4

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	8	8	–
b. Physical science technicians	3320	42	42	–
c. Environmental science technicians	3330	7	7	–
d. Mathematics technicians	3340	–	–	–
e. Biological and agricultural science technicians	3350	12	12	–
f. Medical and health-related technicians	3360	46	46	–
g. Psychology technicians	3370	8	8	–
h. Social science technicians	3380	1	1	–
i. Total (sum of a to h)	3300	124	124	–

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 13,510	3590-2	$ 4,143
b. Capital R&D expenditures	3490-3	3,580	3590-3	118
c. All other expenditures	3490-4	3,158	3590-4	235
d. Total (sum of a to c)	3490-1	$ 20,248	3590-1	$ 4,496

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 1,872	3510	$ 1,300	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	78	3520	–	
c. Local government	3430	–	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	233	3540	205	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	252	3550	67	
f. Institution's own funds	3460	11,021	3560	2,520	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	54	3570	51	
h. Total (sum of a to g)	3400	$ 13,510	3500	$ 4,143	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 13,510	3590-2	$ 4,143
b. Capital R&D expenditures	3490-3	3,580	3590-3	118
c. All other expenditures	3490-4	3,158	3590-4	235
d. Total (sum of a to c)	3490-1	$ 20,248	3590-1	$ 4,496

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)
a. Federal Government	3410	$ 1,872	3510	$ 1,300
b. State government	3420	78	3520	–
c. Local government	3430	–	3530	–
d. Foundations and voluntary health agencies	3440	233	3540	205
e. Industry	3450	252	3550	67
f. Institution's own funds	3460	11,021	3560	2,520
g. Other sources	3470	54	3570	51
h. Total (sum of a to g)	3400	$ 13,510	3500	$ 4,143

Total in 5a, column 1, should equal 7i, column 3.

Total in 5a, column 2, should equal 7i, column 4.

Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.

Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 11,809	$ 1,310
b. Applied research	3620	1,295	509
c. Development	3630	406	53
d. Total (sum of a to c)	3600	$ 13,510	$ 1,872

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 94	$ 40	3810	$ 18	$ 18
b. Physical sciences (total)	3720	$ 1,949	$ 28	3820	$ 195	$ 10
(1) Astronomy	3721	1,523	–	3821	185	–
(2) Chemistry	3722	19	19	3822	5	5
(3) Physics	3723	401	3	3823	–	–
(4) Other physical sciences, NEC	3724	6	6	3824	5	5
c. Environmental sciences (total)	3730	$ 2,425	$ 7	3830	$ 182	$ 3
d. Mathematical sciences (total)	3740	$ 2	$ 2	3840	$ 1	$ 1
(1) Mathematics (exclude computer sciences)	3741	1	1	3841	–	–
(2) Computer sciences	3742	1	1	3842	1	1
e. Life sciences (total)	3750	$ 6,280	$ 3,876	3850	$ 1,203	$ 1,135
(1) Biological (include agricultural sciences)	3751	5,244	2,840	3851	687	619
(2) Clinical medical	3752	985	985	3852	510	510
(3) Other life sciences, NEC	3753	51	51	3853	6	6
f. Psychology (total)	3760	$ 357	$ 182	3860	$ 160	$ 130
g. Social sciences (total)	3770	$ 2,403	$ 8	3870	$ 113	$ 3
(1) Economics	3771	735	–	3871	60	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	1,487	–	3873	50	–
(4) Other social sciences, NEC	3774	181	8	3874	3	3
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 13,510	$ 4,143	3800	$ 1,872	$ 1,300

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

(4) Other physical sciences, NEC	3724	6	6	3824	5	5
c. Environmental sciences (total)	3730	$ 2,425	$ 7	3830	$ 182	$ 3
d. Mathematical sciences (total)	3740	$ 2	$ 2	3840	$ 1	$ 1
(1) Mathematics (exclude computer sciences)	3741	1	1	3841	–	–
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(3) Other life sciences, NEC	3753	51	51	3853	6	6
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h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 13,510	$ 4,143	3800	$ 1,872	$ 1,300

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Name of person who prepared *manpower section*	Title and Telephone
Name of person who prepared *financial section* (if different from above)	Title and Telephone

NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

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Washington, D.C. 20550
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NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

SCIENCE EXHIBITORS (15)

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3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☒ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)______

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1	Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.				
	OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
	a. Scientists and engineers (total).	*3110*	395	358	37
	(1) Number primarily in R&D	*3111*	350	322	28
	(2) Number primarily in other activities . .	*3112*	45	36	9

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

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6. ☒ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☐ Other (please specify)________________

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(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	395	358	37
(1) Number primarily in R&D	*3111*	350	322	28
(2) Number primarily in other activities	*3112*	45	36	9
b. Technicians	*3120*	228	127	101
c. Other employees	*3130*	2,540	1,835	705
d. Total (sum of a to c)	*3100*	3,163	2,320	843

Item 2	Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)					
	FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
	a. Engineers (total)	3210	3	–	1	2
	(1) Ph.D. or Sc.D.	3211	–	–	–	–
	(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
	(3) Master's	3213	–	–	–	–
	(4) Bachelor's or equivalent	3214	3	–	1	2
	b. Physical scientists (total)	3220	12	6	6	–
	(1) Ph.D. or Sc.D.	3221	6	6	–	–
	(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
	(3) Master's	3223	3	–	3	–
	(4) Bachelor's or equivalent	3224	3	–	3	–
	c. Environmental scientists (total)	3230	31	–	26	5
	(1) Ph.D. or Sc.D.	3231	15	–	15	–
	(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
	(3) Master's	3233	9	–	6	3
	(4) Bachelor's or equivalent	3234	7	–	5	2
	d. Mathematicians (total)	3240	–	–	–	–
	(1) Ph.D. or Sc.D.	3241	–	–	–	–
	(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
	(3) Master's	3243	–	–	–	–
	(4) Bachelor's or equivalent	3244	–	–	–	–
	e. Life scientists (total)	3250	236	33	182	21
	(1) Ph.D. or Sc.D.	3251	115	15	93	7
	(2) M.D., D.D.S., D.V.M., etc.	3252	7	7	–	–
	(3) Master's	3253	29	2	24	3
	(4) Bachelor's or equivalent	3254	85	9	65	11
	f. Psychologists (total)	3260	14	–	14	–
	(1) Ph.D. or Sc.D.	3261	9	–	9	–
	(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
	(3) Master's	3263	2	–	2	–
	(4) Bachelor's or equivalent	3264	3	–	3	–
	g. Social scientists (total)	3270	99	–	82	17
	(1) Ph.D. or Sc.D.	3271	35	–	35	–
	(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
	(3) Master's	3273	40	–	27	13
	(4) Bachelor's or equivalent	3274	24	–	20	4
	h. Total Headcount (sum of a to g)	3200	395	39	311	45

Item 3	Technicians, by field and function in which *primarily* employed, October 1973				
	FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
	a. Engineering technicians	3310	9	2	7
	b. Physical science technicians	3320			

(1) Ph.D. or Sc.D.	3221	6	6	–	–
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	3	–	3	–
(4) Bachelor's or equivalent	3224	3	–	3	–
c. Environmental scientists (total)	3230	31	–	26	5
(1) Ph.D. or Sc.D.	3231	15	–	15	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	9	–	6	3
(4) Bachelor's or equivalent	3234	7	–	5	2
d. Mathematicians (total)	3240	–	–	–	–
(1) Ph.D. or Sc.D.	3241	–	–	–	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	–	–	–	–
(4) Bachelor's or equivalent	3244	–	–	–	–
e. Life scientists (total)	3250	236	33	182	21
(1) Ph.D. or Sc.D.	3251	115	15	93	7
(2) M.D., D.D.S., D.V.M., etc.	3252	7	7	–	–
(3) Master's	3253	29	2	24	3
(4) Bachelor's or equivalent	3254	85	9	65	11
f. Psychologists (total)	3260	14	–	14	–
(1) Ph.D. or Sc.D.	3261	9	–	9	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	2	–	2	–
(4) Bachelor's or equivalent	3264	3	–	3	–
g. Social scientists (total)	3270	99	–	82	17
(1) Ph.D. or Sc.D.	3271	35	–	35	–
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	40	–	27	13
(4) Bachelor's or equivalent	3274	24	–	20	4
h. Total Headcount (sum of a to g)	3200	395	39	311	45

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	9	2	7
b. Physical science technicians	3320	2	2	–
c. Environmental science technicians	3330	14	12	2
d. Mathematics technicians	3340	–	–	–
e. Biological and agricultural science technicians	3350	95	84	11
f. Medical and health-related technicians	3360	9	7	2
g. Psychology technicians	3370	35	35	–
h. Social science technicians	3380	64	64	–
i. Total (sum of a to h)	3300	228	206	22

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 7,907	3590-2	$ 1,087
b. Capital R&D expenditures	3490-3	332	3590-3	10
c. All other expenditures	3490-4	34,222	3590-4	194
d. Total (sum of a to c)	3490-1	$ 42,461	3590-1	$ 1,291

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 2,415	3510	$ 770	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	434	3520	–	
c. Local government	3430	56	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	569	3540	–	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	36	3550	5	
f. Institution's own funds	3460	3,373	3560	303	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	1,024	3570	9	
h. Total (sum of a to g)	3400	$ 7,907	3500	$ 1,087	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL (1)	FEDERAL GOVERNMENT (2)

		(1)		(2)
a. Current R&D expenditures (intramural only)	3490-2	$ 7,907	3590-2	$ 1,087
b. Capital R&D expenditures	3490-3	332	3590-3	10
c. All other expenditures	3490-4	34,222	3590-4	194
d. Total (sum of a to c)	3490-1	$ 42,461	3590-1	$ 1,291

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 2,415	3510	$ 770	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	434	3520	–	
c. Local government	3430	56	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	569	3540	–	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	36	3550	5	
f. Institution's own funds	3460	3,373	3560	303	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	1,024	3570	9	
h. Total (sum of a to g)	3400	$ 7,907	3500	$ 1,087	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 7,545	$ 2,286
b. Applied research	3620	331	129
c. Development	3630	31	–
d. Total (sum of a to c)	3600	$ 7,907	$ 2,415

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ –	$ –	3810	$ –	$ –
b. Physical sciences (total)	3720	$ 591	$ 432	3820	$ 332	$ 332
(1) Astronomy	3721	39	–	3821	–	–
(2) Chemistry	3722	552	432	3822	332	332
(3) Physics	3723	–	–	3823	–	–
(4) Other physical sciences, NEC	3724	–	–	3824	–	–
c. Environmental sciences (total)	3730	$ 1,938	$ –	3830	$ 581	$ –
d. Mathematical sciences (total)	3740	$ –	$ –	3840	$ –	$ –
(1) Mathematics (exclude computer sciences)	3741	–	–	3841	–	–
(2) Computer sciences	3742	–	–	3842	–	–
e. Life sciences (total)	3750	$ 3,624	$ 600	3850	$ 1,284	$ 394
(1) Biological (include agricultural sciences)	3751	3,541	517	3851	1,284	394
(2) Clinical medical	3752	83	83	3852	–	–
(3) Other life sciences, NEC	3753	–	–	3853	–	–
f. Psychology (total)	3760	$ 193	$ 55	3860	$ 84	$ 44
g. Social sciences (total)	3770	$ 1,561	$ –	3870	$ 134	$ –
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	254	–	3873	–	–
(4) Other social sciences, NEC	3774	1,307	–	3874	134	–
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 7,907	$ 1,087	3800	$ 2,415	$ 770

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

c. Environmental sciences (total)	3730	$ 1,938	$ –	3830	$ 581	$ –
d. Mathematical sciences (total)	3740	$ –	$ –	3840	$ –	$ –
(1) Mathematics (exclude computer sciences)	3741	–	–	3841	–	–
(2) Computer sciences	3742	–	–	3842	–	–
e. Life sciences (total)	3750	$ 3,624	$ 600	3850	$ 1,284	$ 394
(1) Biological (include agricultural sciences)	3751	3,541	517	3851	1,284	394
(2) Clinical medical	3752	83	83	3852	–	–
(3) Other life sciences, NEC	3753	–	–	3853	–	–
f. Psychology (total)	3760	$ 193	$ 55	3860	$ 84	$ 44
g. Social sciences (total)	3770	$ 1,561	$ –	3870	$ 134	$ –
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	254	–	3873	–	–
(4) Other social sciences, NEC	3774	1,307	–	3874	134	–
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 7,907	$ 1,087	3800	$ 2,415	$ 770

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*

Title and Telephone

Name of person who prepared *financial section* (if different from above)

Title and Telephone

NAME OF INSTITUTION

Date

ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:
National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

TRADE ASSOCIATIONS AND
AGRICULTURAL COOPERATIVES
(41)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☒ Trade association or agricultural cooperative
8. ☐ Other (please specify)__________

PLEASE RETURN THIS COPY

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	709	696	13
(1) Number primarily in R&D	3111	399	390	9

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

PLEASE RETURN THIS COPY

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4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☒ Trade association or agricultural cooperative
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PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total).	*3110*	709	696	13
(1) Number primarily in R&D	*3111*	399	390	9
(2) Number primarily in other activities	*3112*	310	306	4
b. Technicians	*3120*	210	192	9
c. Other employees	*3130*	1,110	1,054	56
d. Total (sum of a to c)	*3100*	2,020	1,942	78

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	524	1	239	284
(1) Ph.D. or Sc.D.	3211	40	–	34	6
(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
(3) Master's	3213	109	–	68	41
(4) Bachelor's or equivalent	3214	375	1	137	237
b. Physical scientists (total)	3220	108	–	94	14
(1) Ph.D. or Sc.D.	3221	30	–	30	–
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	20	–	19	1
(4) Bachelor's or equivalent	3224	58	–	45	13
c. Environmental scientists (total)	3230	12	4	7	1
(1) Ph.D. or Sc.D.	3231	2	2	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	2	–	2	–
(4) Bachelor's or equivalent	3234	8	2	5	1
d. Mathematicians (total)	3240	11	–	8	3
(1) Ph.D. or Sc.D.	3241	2	–	2	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	5	–	3	2
(4) Bachelor's or equivalent	3244	4	–	3	1
e. Life scientists (total)	3250	30	7	21	2
(1) Ph.D. or Sc.D.	3251	19	4	13	2
(2) M.D., D.D.S., D.V.M., etc.	3252	–	–	–	–
(3) Master's	3253	6	3	3	–
(4) Bachelor's or equivalent	3254	5	–	5	–
f. Psychologists (total)	3260	1	–	1	–
(1) Ph.D. or Sc.D.	3261	1	–	1	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	–	–	–	–
(4) Bachelor's or equivalent	3264	–	–	–	–
g. Social scientists (total)	3270	23	11	6	6
(1) Ph.D. or Sc.D.	3271	4	2	–	2
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	8	4	1	3
(4) Bachelor's or equivalent	3274	11	5	5	1
h. Total Headcount (sum of a to g)	3200	709	23	376	310

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Sciences and Engineering Activities (3)
a. Engineering technicians	3310	142	139	3
b. Physical science technicians	3320	33	23	10

b. Physical scientists (total)	3220	108	–	94	14
(1) Ph.D. or Sc.D.	3221	30	–	30	–
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	20	–	19	1
(4) Bachelor's or equivalent	3224	58	–	45	13
c. Environmental scientists (total)	3230	12	4	7	1
(1) Ph.D. or Sc.D.	3231	2	2	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	2	–	2	–
(4) Bachelor's or equivalent	3234	8	2	5	1
d. Mathematicians (total)	3240	11	–	8	3
(1) Ph.D. or Sc.D.	3241	2	–	2	–
(2) M.D., D.D.S., D.V.M., etc.	3242	–	–	–	–
(3) Master's	3243	5	–	3	2
(4) Bachelor's or equivalent	3244	4	–	3	1
e. Life scientists (total)	3250	30	7	21	2
(1) Ph.D. or Sc.D.	3251	19	4	13	2
(2) M.D., D.D.S., D.V.M., etc.	3252	–	–	–	–
(3) Master's	3253	6	3	3	–
(4) Bachelor's or equivalent	3254	5	–	5	–
f. Psychologists (total)	3260	1	–	1	–
(1) Ph.D. or Sc.D.	3261	1	–	1	–
(2) M.D., D.D.S., D.V.M., etc.	3262	–	–	–	–
(3) Master's	3263	–	–	–	–
(4) Bachelor's or equivalent	3264	–	–	–	–
g. Social scientists (total)	3270	23	11	6	6
(1) Ph.D. or Sc.D.	3271	4	2	–	2
(2) M.D., D.D.S., D.V.M., etc.	3272	–	–	–	–
(3) Master's	3273	8	4	1	3
(4) Bachelor's or equivalent	3274	11	5	5	1
h. Total Headcount (sum of a to g)	3200	709	23	376	310

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	142	139	3
b. Physical science technicians	3320	33	23	10
c. Environmental science technicians	3330	6	6	–
d. Mathematics technicians	3340	5	5	–
e. Biological and agricultural science technicians	3350	14	12	2
f. Medical and health-related technicians	3360	–	–	–
g. Psychology technicians	3370	–	–	–
h. Social science technicians	3380	1	–	1
i. Total (sum of a to h)	3300	201	185	16

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 **Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.**

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 26,353	3590-2	$ 2,324
b. Capital R&D expenditures	3490-3	1,601	3590-3	–
c. All other expenditures	3490-4	38,241	3590-4	210
d. Total (sum of a to c)	3490-1	$ 66,195	3590-1	$ 2,534

Item 5 **Current expenditures for intramural research and development, by source of funds, 1972-73**

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 7,550	3510	$ –	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	141	3520	–	
c. Local government	3430	–	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	10	3540	–	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	13,869	3550	2,172	
f. Institution's own funds	3460	4,434	3560	2	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	349	3570	150	
h. Total (sum of a to g)	3400	$ 26,353	3500	$ 2,324	

Item 6 **Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73**

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL	
	TOTAL	FEDERAL GOVERNMENT

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 26,353	3590-2	$ 2,324
b. Capital R&D expenditures	3490-3	1,601	3590-3	–
c. All other expenditures	3490-4	38,241	3590-4	210
d. Total (sum of a to c)	3490-1	$ 66,195	3590-1	$ 2,534

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)
a. Federal Government	3410	$ 7,550	3510	$ –
b. State government	3420	141	3520	–
c. Local government	3430	–	3530	–
d. Foundations and voluntary health agencies	3440	10	3540	–
e. Industry	3450	13,869	3550	2,172
f. Institution's own funds	3460	4,434	3560	2
g. Other sources	3470	349	3570	150
h. Total (sum of a to g)	3400	$ 26,353	3500	$ 2,324

Total in 5a, column 1, should equal 7i, column 3.

Total in 5a, column 2, should equal 7i, column 4.

Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.

Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 2,411	$ 185
b. Applied research	3620	11,739	1,644
c. Development	3630	12,203	5,721
d. Total (sum of a to c)	3600	$ 26,353	$ 7,550

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 20,398	$ 41	3810	$ 6,786	$ –
b. Physical sciences (total)	3720	$ 1,459	$ –	3820	$ 615	$ –
(1) Astronomy	3721	–	–	3821	–	–
(2) Chemistry	3722	1,225	–	3822	615	–
(3) Physics	3723	33	–	3823	–	–
(4) Other physical sciences, NEC	3724	201	–	3824	–	–
c. Environmental sciences (total)	3730	$ 990	$ 531	3830	$ 94	$ –
d. Mathematical sciences (total)	3740	$ 149	$ –	3840	$ 55	$ –
(1) Mathematics (exclude computer sciences)	3741	24	–	3841	15	–
(2) Computer sciences	3742	125	–	3842	40	–
e. Life sciences (total)	3750	$ 1,877	$ 635	3850	$ –	$ –
(1) Biological (include agricultural sciences)	3751	1,877	635	3851	–	–
(2) Clinical medical	3752	–	–	3852	–	–
(3) Other life sciences, NEC	3753	–	–	3853	–	–
f. Psychology (total)	3760	$ –	$ –	3860	$ –	$ –
g. Social sciences (total)	3770	$ 1,480	$ 1,117	3870	$ –	$ –
(1) Economics	3771	31	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	–	–	3873	–	–
(4) Other social sciences, NEC	3774	1,433	1,117	3874	–	–
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 26,353	$ 2,324	3800	$ 7,550	$ –

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone

c. Environmental sciences (total) . .	3730	$ 990	$ 531	3830	$ 94	$ –
d. Mathematical sciences (total) . . .	3740	$ 149	$ –	3840	$ 55	$ –
(1) Mathematics (exclude computer sciences)	3741	24	–	3841	15	–
(2) Computer sciences	3742	125	–	3842	40	–
e. Life sciences (total)	3750	$ 1,877	$ 635	3850	$ –	$ –
(1) Biological (include agricultural sciences) . . .	3751	1,877	635	3851	–	–
(2) Clinical medical	3752	–	–	3852	–	–
(3) Other life sciences, NEC . .	3753	–	–	3853	–	–
f. Psychology (total)	3760	$ –	$ –	3860	$ –	$ –
g. Social sciences (total)	3770	$ 1,480	$ 1,117	3870	$ –	$ –
(1) Economics	3771	31	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	–	–	3873	–	–
(4) Other social sciences, NEC . .	3774	1,433	1,117	3874	–	–
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 26,353	$ 2,324	3800	$ 7,550	$ –

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone
Name of person who prepared *financial section* (if different from above)	Title and Telephone

NAME OF INSTITUTION	Date	ADDRESS (number, street, city, State ZIP Code)

NSF Form 514

OMB No. 99-R 0281
Approval Expires: Dec. 31, 1974

Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Organizations are requested to complete and return this form within 30 days to:

National Science Foundation
Washington, D.C. 20550
Attn: UNISG

NAME AND ADDRESS OF ORGANIZATION
(Please correct if name or address has changed)

OTHER NONPROFIT INSTITUTIONS
(26)

Please indicate below the number of any item that should not be published with institutional identification:

(PLEASE RETURN THIS COPY)

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
2. ☐ Federally Funded Research and Development Center
3. ☐ Voluntary nonprofit hospital
4. ☐ Professional or technical society, or academy of science
5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☒ Other (please specify)

PLEASE RETURN THIS COPY

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	3110	1,690	1,545	145
(1) Number primarily in R&D	3111	962	866	96
(2) Number primarily in other activities	3112	728	629	49

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item total rather than leave an item blank.

(PLEASE RETURN THIS COPY)

Please check the *one* box which *most closely* identifies your institution:

1. ☐ Research institute
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5. ☐ Private foundation
6. ☐ Science exhibitor
7. ☐ Trade association or agricultural cooperative
8. ☒ Other (please specify)__________________

PLEASE RETURN THIS COPY

PART I – PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Personnel data are to be reported as of October 1973 or as close as possible thereto.

Item 1 **Total employment of your organization in all activities (full time and part time), by selected occupational group and employment status, October 1973.**

OCCUPATIONAL GROUP		Total (1)	Full time (2)	Part time (3)
a. Scientists and engineers (total)	*3110*	1,690	1,545	145
(1) Number primarily in R&D	*3111*	962	866	96
(2) Number primarily in other activities	*3112*	728	629	49
b. Technicians	*3120*	604	544	60
c. Other employees	*3130*	9,016	8,606	410
d. Total (sum of a to c)	*3100*	11,310	10,695	615

Item 2

Scientists and engineers, by field in which *primarily* employed, highest earned degree, and function, October 1973 (See item 1a, column 1)

FIELD OF EMPLOYMENT AND HIGHEST EARNED DEGREE		Total (1)	Medical and health related R&D (2)	Other R&D (3)	Other functions (4)
a. Engineers (total)	3210	38	20	8	10
(1) Ph.D. or Sc.D.	3211	7	4	3	–
(2) M.D., D.D.S., D.V.M., etc.	3212	–	–	–	–
(3) Master's	3213	4	3	–	1
(4) Bachelor's or equivalent	3214	27	13	5	9
b. Physical scientists (total)	3220	14	2	5	7
(1) Ph.D. or Sc.D.	3221	5	–	2	3
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	4	–	2	2
(4) Bachelor's or equivalent	3224	5	2	1	2
c. Environmental scientists (total)	3230	–	–	–	–
(1) Ph.D. or Sc.D.	3231	–	–	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	–	–	–	–
(4) Bachelor's or equivalent	3234	–	–	–	–
d. Mathematicians (total)	3240	219	43	55	121
(1) Ph.D. or Sc.D.	3241	22	4	7	11
(2) M.D., D.D.S., D.V.M., etc.	3242	3	3	–	–
(3) Master's	3243	54	13	13	28
(4) Bachelor's or equivalent	3244	140	23	35	82
e. Life scientists (total)	3250	670	467	13	190
(1) Ph.D. or Sc.D.	3251	145	129	1	15
(2) M.D., D.D.S., D.V.M., etc.	3252	135	74	–	61
(3) Master's	3253	226	182	4	40
(4) Bachelor's or equivalent	3254	164	82	8	74
f. Psychologists (total)	3260	431	37	128	266
(1) Ph.D. or Sc.D.	3261	237	21	77	139
(2) M.D., D.D.S., D.V.M., etc.	3262	5	5	–	–
(3) Master's	3263	132	6	37	89
(4) Bachelor's or equivalent	3264	57	5	14	38
g. Social scientists (total)	3270	318	127	57	134
(1) Ph.D. or Sc.D.	3271	91	61	11	19
(2) M.D., D.D.S., D.V.M., etc.	3272	17	17	–	–
(3) Master's	3273	94	26	24	44
(4) Bachelor's or equivalent	3274	116	23	22	71
h. Total Headcount (sum of a to g)	3200	1,690	696	266	728

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	23	17	6
b. Physical science technicians	3320	3	–	3

b. Physical scientists (total)	3220	14	2	5	7
(1) Ph.D. or Sc.D.	3221	5	–	2	3
(2) M.D., D.D.S., D.V.M., etc.	3222	–	–	–	–
(3) Master's	3223	4	–	2	2
(4) Bachelor's or equivalent	3224	5	2	1	2
c. Environmental scientists (total)	3230	–	–	–	–
(1) Ph.D. or Sc.D.	3231	–	–	–	–
(2) M.D., D.D.S., D.V.M., etc.	3232	–	–	–	–
(3) Master's	3233	–	–	–	–
(4) Bachelor's or equivalent	3234	–	–	–	–
d. Mathematicians (total)	3240	219	43	55	121
(1) Ph.D. or Sc.D.	3241	22	4	7	11
(2) M.D., D.D.S., D.V.M., etc.	3242	3	3	–	–
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(1) Ph.D. or Sc.D.	3251	145	129	1	15
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(3) Master's	3253	226	182	4	40
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f. Psychologists (total)	3260	431	37	128	266
(1) Ph.D. or Sc.D.	3261	237	21	77	139
(2) M.D., D.D.S., D.V.M., etc.	3262	5	5	–	–
(3) Master's	3263	132	6	37	89
(4) Bachelor's or equivalent	3264	57	5	14	38
g. Social scientists (total)	3270	318	127	57	134
(1) Ph.D. or Sc.D.	3271	91	61	11	19
(2) M.D., D.D.S., D.V.M., etc.	3272	17	17	–	–
(3) Master's	3273	94	26	24	44
(4) Bachelor's or equivalent	3274	116	23	22	71
h. Total Headcount (sum of a to g)	3200	1,690	696	266	728

Item 3

Technicians, by field and function in which *primarily* employed, October 1973

FIELD OF EMPLOYMENT		Total (1)	R&D (2)	Other Science and Engineering Activities (4)
a. Engineering technicians	3310	23	17	6
b. Physical science technicians	3320	3	–	3
c. Environmental science technicians	3330	–	–	–
d. Mathematics technicians	3340	113	14	99
e. Biological and agricultural science technicians	3350	69	47	22
f. Medical and health-related technicians	3360	336	310	26
g. Psychology technicians	3370	–	–	–
h. Social science technicians	3380	60	29	31
i. Total (sum of a to h)	3300	604	417	187

PART II – FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Financial data are requested for the fiscal year which began on July 1, 1972 and ended on June 30, 1973, or your institution's equivalent fiscal year. Specify the ending date if different from above:

Please read the enclosed instructions before completing this form. Where exact data are not available, estimates are acceptable. Enter "O" as an item rather than leave an item blank.

All financial data requested on this form should be reported *in thousands of dollars;* for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported in the appropriate columns as $25.

Item 4 Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 26,017	3590-2	$ 19,011
b. Capital R&D expenditures	3490-3	437	3590-3	95
c. All other expenditures	3490-4	305,490	3590-4	130,143
d. Total (sum of a to c)	3490-1	$ 331,944	3590-1	$149,249

Item 5 Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)
a. Federal Government	3410	$ 12,518	3510	$ 9,679
b. State government	3420	41	3520	–
c. Local government	3430	354	3530	–
d. Foundations and voluntary health agencies	3440	6,254	3540	5,868
e. Industry	3450	222	3550	182
f. Institution's own funds	3460	6,459	3560	3,202
g. Other sources	3470	169	3570	80
h. Total (sum of a to g)	3400	$ 26,017	3500	$ 19,011

Total in 5a, column 1, should equal 7i, column 3.

Total in 5a, column 2, should equal 7i, column 4.

Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.

Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.

Item 6 Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY	ESTIMATED TOTAL

Total expenditures of your organization in all activities (current and capital), by type of expenditure, 1972-73.

Thousands of dollars

TYPE OF EXPENDITURE		Total (1)		Medical and health related (2)
a. Current R&D expenditures (intramural only)	3490-2	$ 26,017	3590-2	$ 19,011
b. Capital R&D expenditures	3490-3	437	3590-3	95
c. All other expenditures	3490-4	305,490	3590-4	130,143
d. Total (sum of a to c)	3490-1	$ 331,944	3590-1	$149,249

Item 5

Current expenditures for intramural research and development, by source of funds, 1972-73

Thousands of dollars

SOURCE OF FUNDS		Total (1)		Medical and health related (2)	
a. Federal Government	3410	$ 12,518	3510	$ 9,679	Total in 5a, column 1, should equal 7i, column 3.
b. State government	3420	41	3520	–	
c. Local government	3430	354	3530	–	Total in 5a, column 2, should equal 7i, column 4.
d. Foundations and voluntary health agencies	3440	6,254	3540	5,868	Total in 5h, column 1, should equal 4a, column 1, and 7i, column 1.
e. Industry	3450	222	3550	182	
f. Institution's own funds	3460	6,459	3560	3,202	Total in 5h, column 2, should equal 4a, column 2, and 7i, column 2.
g. Other sources	3470	169	3570	80	
h. Total (sum of a to g)	3400	$ 26,017	3500	$ 19,011	

Item 6

Total and federally financed current expenditures for intramural research and development, by type of R&D activity, 1972-73

Thousands of dollars

TYPE OF R&D ACTIVITY		ESTIMATED TOTAL	
		TOTAL (1)	FEDERAL GOVERNMENT (2)
a. Basic research	3610	$ 14,259	$ 8,592
b. Applied research	3620	8,606	2,886
c. Development	3630	3,152	1,040
d. Total (sum of a to c)	3600	$ 26,017	$ 12,518

Item 7

Total and federally financed current expenditures for intramural research and development, by field of science, 1972-73

Thousands of dollars

FIELD OF SCIENCE		ALL SOURCES			FEDERAL GOVERNMENT	
		Total (1)	Medical and health related (2)		Total (3)	Medical and health related (4)
a. Engineering (total)	3710	$ 147	$ 96	3810	$ 15	$ 15
b. Physical sciences (total)	3720	$ –	$ –	3820	$ –	$ –
(1) Astronomy	3721	–	–	3821	–	–
(2) Chemistry	3722	–	–	3822	–	–
(3) Physics	3723	–	–	3823	–	–
(4) Other physical sciences, NEC	3724	–	–	3824	–	–
c. Environmental sciences (total)	3730	$ –	$ –	3830	$ –	$ –
d. Mathematical sciences (total)	3740	$ 225	$ 225	3840	$ 183	$ 183
(1) Mathematics (exclude computer sciences)	3741	36	36	3841	5	5
(2) Computer sciences	3742	189	189	3842	178	178
e. Life sciences (total)	3750	$ 15,245	$ 15,202	3850	$ 8,500	$ 8,457
(1) Biological (include agricultural sciences)	3751	2,740	2,697	3851	1,396	1,353
(2) Clinical medical	3752	7,177	7,177	3852	4,807	4,807
(3) Other life sciences, NEC	3753	5,328	5,328	3853	2,297	2,297
f. Psychology (total)	3760	$ 6,458	$ 931	3860	$ 3,127	$ 546
g. Social sciences (total)	3770	$ 3,942	$ 2,557	3870	$ 693	$ 478
(1) Economics	3771	–	–	3871	–	–
(2) Political science	3772	–	–	3872	–	–
(3) Sociology	3773	1,221	68	3873	46	–
(4) Other social sciences, NEC	3774	2,721	2,489	3874	647	478
h. Other sciences, NEC (total)	3780	$ –	$ –	3880	$ –	$ –
i. Total (sum of a to h)	3700	$ 26,017	$ 19,011	3800	$ 12,518	$ 9,679

REMARKS: *(If additional space is needed, attach an extra page)* Please compare your 1973 data with your response for 1969 and explain any significant changes from prior years. Where possible indicate any required adjustments in data for prior years. Describe briefly the types of research projects carried out by your organization in 1973. If you prefer, attach a statement or a report of your organization that contains such information.

Name of person who prepared *manpower section*	Title and Telephone
Name of person who prepared *financial section* (if different from above)	Title and Telephone

c. Environmental sciences (total)	3730	$ –	$ –	3830	$ –	$ –
d. Mathematical sciences (total)	3740	$ 225	$ 225	3840	$ 183	$ 183
(1) Mathematics (exclude computer sciences)	3741	36	36	3841	5	5
(2) Computer sciences	3742	189	189	3842	178	178
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(1) Economics	3771	–	–	3871	–	–
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Name of person who prepared *manpower section*

Title and Telephone

Name of person who prepared *financial section* (if different from above)

Title and Telephone

NAME OF INSTITUTION

Date

ADDRESS (number, street, city, State ZIP Code)

NSF Form 514
Instruction Sheet

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

Instructions for Survey of R&D Activities of Independent Nonprofit Institutions, 1973

Page

General Instructions 1

Definition of Research and Development 3
Classification of Fields 3
Medical and Health-Related Research and Development 4

PART I. Personnel Data

Item 1. Total Employment 5
Item 2. Scientists and Engineers 5
Item 3. Number of Technicians Employed in the Sciences and Engineering 6

PART II. Financial Data

Item 4. Total Expenditures 7
Item 5. Current Expenditures for Research and Development, by Source of Funds, 1973 7
Item 6. Total and Federally Financed Current Expenditures for Intramural Research and Development, by Type of R&D Activity, 1972-73 8
Item 7. Total and Federally Financed Current Expenditures for Intramural Research and Development, by Field of Science, 1972-73 8

GENERAL INSTRUCTIONS

The National Science Foundation, an independent agency of the Federal Government, requests your cooperation in completing the attached questionnaire covering the manpower and financial data of your organization as they relate to science and engineering. The purpose of this survey is to obtain statistical data on the resources devoted to scientific and engineering activities by nonprofit organizations. The information obtained will assist the National Science Foundation in fulfilling its responsibility for the support of research and education in the sciences and engineering and in the formulation of recommendations on national science policy.

Where no specific records exist for statistical data requested in the form, reasonable estimates are acceptable. Please report for the entire organization including any unincorporated branches, divisions and departments. If separate offices and facilities are maintained in the United States in addition to those at the address to which the survey materials were mailed, please indicate the name and address of each of these facilities in the remarks section or on an attached sheet. Enter "0" as an item total rather than leave an entire item blank.

This survey is generally comparable to that conducted by this office in 1970, covering financial expenditures for fiscal year 1969 and personnel as of January 1970.

The financial section covers the fiscal year beginning on July 1, 1972, and ending June 30, 1973, or your institution's equivalent fiscal year ending in 1973. The personnel section covers manpower as of mid-October, 1973.

If you have any questions regarding information requested on this form or if you need additional forms, write or telephone Mr. J. G. Huckenpahler at the Universities and Nonprofit Institutions Studies Group (202-282-7790), National Science Foundation, 1800 "G" Street, N.W., Washington, D.C. 20550.

Before returning this questionnaire, please compare the figures with those submitted in 1970 (a copy of your institution's 1970 response will be mailed to you on request) and where the new figures differ significantly from those reported in the previous survey, indicate the reasons for the difference in the space provided for "remarks." Also, please classify your institution according to the *one* category which fits it most closely.

For National Science Foundation purposes, the types of institution are defined as follows:

1. **Research institute.** A separately incorporated, independent nonprofit organization operating under the direction of its own controlling body, the primary function of which is the performance of research and development in the sciences and engineering.

2. **Federally Funded Research and Development Center (FFRDC).** An R&D organization that was established to meet the particular research needs of a Federal agency. As defined by the Federal Council for Science and Technology, an FFRDC possesses the following principal characteristics:

a) Its primary activities include basic research, applied research, development, or R&D management;
b) it is organized as a separate operational unit and expected to have a long-term relationship (about 5 years or more) with its sponsoring agency, as evidenced by specific obligations assumed by it and the agency;
c) it conducts R&D work upon the direct request of, or under a broad charter from, the sponsoring Federal agency;
d) it receives at least 70 percent of its financial support from the Federal Government;
e) it has an average annual budget of at least $500,000; and
f) most or all of its facilities are owned or are funded for in the contract with the Federal Government.

Included in the nonprofit survey are the following FFRDC's:

Institute for Defense Analyses (IDA)
Aerospace Corporation
Analytic Services, Inc. (ANSER)
MITRE Corporation
RAND Corporation
Atomic Bomb Casualty Commission (National Academy of Sciences)
Pacific Northwest Laboratory (Battelle Memorial Institute)

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urvey of R&D Activities of nprofit Institutions, 1973

Page

.... 1

opment 3

.... 3

arch and Development 4

.... 5

.... 5

Employed in the Sciences and Engineering 6

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or Research and Development, by Source 7

Financed Current Expenditures for h and Development, by Type -73 8

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als were mailed, please indicate the name and address of each of these facilities in the remarks section or on an attached sheet. Enter "0" as an item total rather than leave an entire item blank.

This survey is generally comparable to that conducted by this office in 1970, covering financial expenditures for fiscal year 1969 and personnel as of January 1970.

The financial section covers the fiscal year beginning on July 1, 1972, and ending June 30, 1973, or your institution's equivalent fiscal year ending in 1973. The personnel section covers manpower as of mid-October, 1973.

If you have any questions regarding information requested on this form or if you need additional forms, write or telephone Mr. J. G. Huckenpahler at the Universities and Nonprofit Institutions Studies Group (202-282-7790), National Science Foundation, 1800 "G" Street, N.W., Washington, D.C. 20550.

Before returning this questionnaire, please compare the figures with those submitted in 1970 (a copy of your institution's 1970 response will be mailed to you on request) and where the new figures differ significantly from those reported in the previous survey, indicate the reasons for the difference in the space provided for "remarks." Also, please classify your institution according to the *one* category which fits it most closely.

For National Science Foundation purposes, the types of institution are defined as follows:

1. **Research institute.** A separately incorporated, independent nonprofit organization operating under the direction of its own controlling body, the primary function of which is the performance of research and development in the sciences and engineering.

2. **Federally Funded Research and Development Center (FFRDC).** An R&D organization that was established to meet the particular research needs of a Federal agency. As defined by the Federal Council for Science and Technology, an FFRDC possesses the following principal characteristics:

   a) Its primary activities include basic research, applied research, development, or R&D management;
   b) it is organized as a separate operational unit and expected to have a long-term relationship (about 5 years or more) with its sponsoring agency, as evidenced by specific obligations assumed by it and the agency;
   c) it conducts R&D work upon the direct request of, or under a broad charter from, the sponsoring Federal agency;
   d) it receives at least 70 percent of its financial support from the Federal Government;
   e) it has an average annual budget of at least $500,000; and
   f) most or all of its facilities are owned or are funded for in the contract with the Federal Government.

Included in the nonprofit survey are the following FFRDC's:

Institute for Defense Analyses (IDA)
Aerospace Corporation
Analytic Services, Inc. (ANSER)
MITRE Corporation
RAND Corporation
Atomic Bomb Casualty Commission (National Academy of Sciences)
Pacific Northwest Laboratory (Battelle Memorial Institute)

3. **Voluntary hospital.** A member of the American Hospital Association not subject to the control of either Federal, State, or local governments, nor an integral part of any institution of higher education. Hospitals which have been set up by research institutes and which, while providing patient care, function primarily as laboratories for the research institutes, should be included in the "Research Institutes" category (#1).

4. **Professional or technical society, or academy of science.** A voluntary association of individuals sharing a common interest in the advancement of knowledge, either within a single field or across a broad spectrum of disciplines. The major function of these organizations is to aid and encourage the collection, collation, and dissemination of scientific knowledge for the benefit of their members and the scientific community *as a whole*.

5. **Private foundation.** A nongovernmental, nonprofit organization having a principal fund of its own, managed by its own trustees or directors, and established to maintain or to aid social, educational, charitable, religious, or other activities serving the common welfare. This organizational type includes operating foundations, which allocate the greater proportion of their R&D budgets to intramural performance, and philanthropic foundations, which allocate most of their funds to grants and contracts for research to be performed extramurally.

6. **Science exhibitor.** A nonprofit organization which has as its primary goal the expansion of scientific literacy *within its community* by providing exhibits that display and interpret the latest scientific findings within its field or fields. Included in this category are museums, zoological parks, botanical gardens, and arboreta.

7. **Trade association.** An organization of business competitors in a specific industry or business, primarily interested in the commercial promotion of products or services. Membership is usually held in the name of a business entity. Its activities may fall into one or more of the following areas: business ethics, management practices, standardization, commercial (i.e., statistical) research, publication, promotion, and public relations.

Agricultural cooperative. An organization of individuals or business entities nominally competitors in the production and sale of agricultural products. Its activities may include one or more of the following areas: collective marketing or purchasing, research, public relations, and the improvement of the economic condition of the farm population of the United States.

Definition of Research and Development

Research and development includes basic and applied research in the sciences and in engineering, and design and development of prototypes and processes.

Included in this definition is the preparation for publication of books and papers describing the results of the specific research and development, if carried out as an integral part of that research and development. Also included is the administration of research and development.

Research is a systematic, intensive study directed toward fuller knowledge of the subject studied. Research may be either basic or applied.

Basic research is directed toward an increase of knowledge; it is research where the primary aim *of the investigator* is a fuller knowledge or understanding of the subject under study rather than a practical application thereof.

Applied research is directed toward the practical application of knowledge. The definition of applied research differs from the definition of basic research chiefly in terms of the objectives *of the investigator*.

Development is the systematic use of knowledge directed toward the design and production of useful prototypes, materials, devices, systems, methods, or processes. It does not include quality control or routine product testing.

Classification of Fields

Listed below are the fields of science and engineering that are to be used in classifying employment (items 2 and 3) and R&D expenditures (item 7). Classify persons employed in interdisciplinary or multidisciplinary fields in the particular field in which their activities are most closely identified. However, R&D expenditures in interdisciplinary or multidisciplinary fields should be classified in "Other Sciences, N.E.C.," as indicated below.

ENGINEERING
- AERONAUTICAL:
  - Aerodynamics
- ASTRONAUTICAL:
  - Aerospace, space technology
- CHEMICAL:
  - Petroleum, petroleum refining, process
- CIVIL:
  - Architectural, hydraulic, hydrologic, marine, sanitary and environmental, structural, transportation
- ELECTRICAL:
  - Communication, electronic, power
- MECHANICAL:
  - Engineering mechanics
- METALLURGY AND MATERIALS:
  - Ceramic, mining, textile, welding
- OTHER ENGINEERING, NEC*
  - Agricultural, industrial and management, nuclear, ocean engineering systems

PHYSICAL SCIENCES
- ASTRONOMY:
  - Laboratory astrophysics, optical astronomy, radio astronomy, theoretical astrophysics, X-ray, gamma-ray, neutrino astronomy
- CHEMISTRY:
  - Inorganic, organo-metallic, organic, physical
- PHYSICS:
  - Acoustics, atomic and molecular, condensed matter, elementary particles, nuclear structure, optics, plasma
- OTHER PHYSICAL SCIENCES, NEC*

ENVIRONMENTAL SCIENCES (Terrestrial and Extraterrestrial)

- ATMOSPHERIC SCIENCES:
  - Aeronomy, solar, weather modification, extra-terrestrial atmospheres, meteorology
- GEOLOGICAL SCIENCES:
  - Engineering geophysics, general geology, geodesy and gravity, geomagnetism, hydrology, inorganic geochemistry, isotopic geochemistry, organic geochemistry, lab geophysics, paleomagnetism, paleontology, physical geography and cartography, seismology, soil sciences
- OCEANOGRAPHY:
  - Chemical oceanography, geological oceanography, physical oceanography, marine geophysics

MATHEMATICAL SCIENCES

- MATHEMATICS:
  - Algebra, analysis, applied mathematics, foundations and logic, geometry, numerical analysis, statistics, topology
- COMPUTER SIENCE:
  - Design, development, and application of computer capabilities to data storage and manipulation, computer and information sciences (general), information sciences and systems, data processing, computer programming, systems analysis

LIFE SCIENCES
- BIOLOGICAL:
  - Agricultural sciences, anatomy, animal sciences, bacteriology, biochemistry, biogeography, biological oceanography, biophysics, ecology, embryology, entomology, evolutionary biology, genetics, immunology, microbiology, nutrition and metabolism, parasitology, pathology, pharmacology, physical anthropology, physiology, plant sciences, radiobiology, systematics
- CLINICAL MEDICAL:
  - Internal medicine, neurology, ophthalmology, preventive medicine and public health, psychiatry, radiology, surgery, veterinary medicine, dentistry, physical medicine and rehabilitation, pharmacy, podiatry
- OTHER LIFE SCIENCES, NEC*

PSYCHOLOGY
- BIOLOGICAL ASPECTS:
  - Experimental psychology, animal behavior, clinical psychology, comparative psychology, ethology
- SOCIAL ASPECTS:
  - Social psychology; educational, personnel, vocational psychology and testing; industrial and engineering psychology; development and personality
- OTHER PSYCHOLOGICAL SCIENCES, NEC*

SOCIAL SCIENCES
- ECONOMICS:
  - Econometrics and economic statistics; history of economic thought, international economics; industrial, labor and agricultural economics; macroeconomics; microeconomics; public finance and fiscal policy; theory; economic systems and development
- POLITICAL SCIENCE:
  - Area or regional studies; comparative government; history of political ideas; international relations and law, national, political and legal systems; political theory; public administration
- SOCIOLOGY:
  - Comparative and historical, complex organizations, culture and social structure, demography, group interactions, social problems and social welfare, sociological theory
- OTHER SOCIAL SCIENCES, NEC*
  - Cultural anthropology, history, linguistics, socio-economic geography, and research in education

OTHER SCIENCES, NEC*

To be used only when *multidisciplinary* and interdisciplinary aspects make it impossible to classify the project or employment under one primary field. Do *not* include nonscience activities such as English or music because these activities are outside the scope of the survey.

Medical and Health-Related Research and Development

These activities comprise a broad area of scientific inquiry aimed ultimately at the improvement of human health and conquest of disease. It draws upon all fields of science—life, physical, engineering, psychological, and social—and many disciplines within each field. Within this broader context, medical and health-related research and development is defined by the National Institutes of Health as all systematic study directed toward the development and use of scientific knowledge through fundamental research in the laboratory; clinical investigations; clinical trials; epidemiological, engineering, and demographic studies; and controlled pilo

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*NOT ELSEWHERE CLASSIFIED—Used for multidisciplinary projects within the primary field and for single discipline projects not requested separately. Note disciplines in "Remarks" section.

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the Navy),
of Biology
and Space
Division),

MECHANICAL:
Engineering mechanics
METALLURGY AND MATERIALS:
Ceramic, mining, textile, welding
OTHER ENGINEERING, NEC*
Agricultural, industrial and management, nuclear, ocean engineering systems

PHYSICAL SCIENCES
ASTRONOMY:
Laboratory astrophysics, optical astronomy, radio astronomy, theoretical astrophysics, X-ray, gamma-ray, neutrino astronomy
CHEMISTRY:
Inorganic, organo-metallic, organic, physical
PHYSICS:
Acoustics, atomic and molecular, condensed matter, elementary particles, nuclear structure, optics, plasma
OTHER PHYSICAL SCIENCES, NEC*

ENVIRONMENTAL SCIENCES (Terrestrial and Extraterrestrial)

ATMOSPHERIC SCIENCES:
Aeronomy, solar, weather modification, extra-terrestrial atmospheres, meteorology
GEOLOGICAL SCIENCES:
Engineering geophysics, general geology, geodesy and gravity, geomagnetism, hydrology, inorganic geochemistry, isotopic geochemistry, organic geochemistry, lab geophysics, paleomagnetism, paleontology, physical geography and cartography, seismology, soil sciences
OCEANOGRAPHY:
Chemical oceanography, geological oceanography, physical oceanography, marine geophysics

MATHEMATICAL SCIENCES

MATHEMATICS:
Algebra, analysis, applied mathematics, foundations and logic, geometry, numerical analysis, statistics, topology
COMPUTER SIENCE:
Design, development, and application of computer capabilities to data storage and manipulation, computer and information sciences (general), information sciences and systems, data processing, computer programming, systems analysis

LIFE SCIENCES
BIOLOGICAL:
Agricultural sciences, anatomy, animal sciences, bacteriology, biochemistry, biogeography, biological oceanography, biophysics, ecology, embryology, entomology, evolutionary biology, genetics, immunology, microbiology, nutrition and metabolism, parasitology, pathology, pharmacology, physical anthropology, physiology, plant sciences, radiobiology, systematics
CLINICAL MEDICAL:
Internal medicine, neurology, ophthalmology, preventive medicine and public health, psychiatry, radiology, surgery, veterinary medicine, dentistry, physical medicine and rehabilitation, pharmacy, podiatry
OTHER LIFE SCIENCES, NEC*

PSYCHOLOGY
BIOLOGICAL ASPECTS:
Experimental psychology, animal behavior, clinical psychology, *comparative psychology, ethology*
SOCIAL ASPECTS:
Social psychology, educational, personnel, vocational psychology and testing; industrial and engineering psychology; development and personality
OTHER PSYCHOLOGICAL SCIENCES, NEC*

SOCIAL SCIENCES
ECONOMICS:
Econometrics and economic statistics; history of economic thought; international economics, industrial, labor and agricultural economics; macroeconomics; microeconomics; public finance and fiscal policy; theory; economic systems and development
POLITICAL SCIENCE:
Area or regional studies; comparative government; history of political ideas; international relations and law; national, political and legal systems; political theory; public administration
SOCIOLOGY:
Comparative and historical, complex organizations, culture and social structure, demography, group interactions, social problems and social welfare, sociological theory
OTHER SOCIAL SCIENCES, NEC*
Cultural anthropology, history, linguistics, socio-economic geography, and research in education

OTHER SCIENCES, NEC*
To be used only when multidisciplinary and interdisciplinary aspects make it impossible to classify the project or employment under one primary field. Do *not* include nonscience activities such as English or music because these activities are outside the scope of the survey.

Medical and Health-Related Research and Development

These activities comprise a broad area of scientific inquiry aimed ultimately at the improvement of human health and conquest of disease. It draws upon all fields of science—life, physical, engineering, psychological, and social—and many disciplines within each field. Within this broader context, medical and health-related research and development is defined by the National Institutes of Health as all systematic study directed toward the development and use of scientific knowledge through fundamental research in the laboratory; clinical investigations; clinical trials; epidemiological, engineering, and demographic studies; and con-

trolled pilot projects in the following areas:

1. **Research**
   a) The causes, diagnosis, treatment, control, prevention of, and rehabilitation relating to the physical and mental diseases and other killing and crippling impairments of mankind.
   b) The biomedical aspects of research directed at maintaining human effectiveness in normal and stressful environments.
   c) The origin, nature, and solution of health problems not identifiable in terms of disease entities, such as research in problems of mental health and human development (including child development); alcoholism, drug addiction, sexual deviancy; accident prevention; air, water, and noise pollution.
   d) Broad fields of science where the research is undertaken to obtain an understanding of processes affecting disease and human well-being.
   e) Research in nutritional and population problems impairing, contributing to, or otherwise affecting optimum health.
   f) Research concerning all aspects of the organization and delivery of health services.

2. **Development**

The development of improved methods, techniques, and equipment for: research, diagnosis, therapy, rehabilitation, and promotion of public health.

Where existing records do not readily provide the information requested for medical and health-related research and development please furnish your best estimates as to general orders of magnitude. At least on a minimum basis, these estimates may be derived from the sources of funds supporting the research; it may be presumed that research is medical and health-related when funds are provided from the following sources: pharmaceutical companies; medical supply companies; voluntary health agencies; State and local government health departments; certain Federal agencies, viz., U.S. Public Health Service (including NIH), Children's Bureau, Food and Drug Administration, Vocational Rehabilitation Administration, Department of Defense (Office of the Surgeon General of the Army, of the Air Force, and Bureau of Medicine and Surgery of the Navy), Atomic Energy Commission (Division of Biology and Medicine), National Aeronautics and Space Administration (Aerospace Medicine Division), and Veterans Administration.

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*NOT ELSEWHERE CLASSIFIED—Used for multidisciplinary projects within the primary field and for single discipline projects not requested separately. Note disciplines in "Remarks" section.

PART I—PERSONNEL DATA

(Includes items 1 to 3 of the survey questionnaire)

Item 1—Total Employment. Report of the number of persons employed *directly* by your organization on a full- and part-time basis in all activities in the United States and in foreign countries during the mid-October pay period (the payroll period containing October 12, 1973). Do not include contributed services.

1a. *Scientists and Engineers*-Scientists and engineers for this survey are defined as all persons engaged in scientific or engineering work at a level which requires a knowledge equivalent at least to that acquired through completion of a 4-year college course with a major in one of the following fields, regardless of whether they hold a college degree in the field: physical, life, or social sciences, engineering, mathematics, or psychology.

In column (1) report total number of such persons employed full- and part-time by your organization in October 1973. Include all scientific and engineering personnel including all persons engaged in administrative and management activities requiring a scientific or engineering background. Include as scientists only those physicians, dentists, public health specialists, pharmacists, etc., who spend the greatest proportion of their time in clinical investigation or other R&D activities. Exclude all medical practitioners who spend the greatest proportion of their time providing patient care, dispensing drugs or services, or in diagnosis, etc. Exclude persons trained in science or engineering but currently employed in positions not requiring such training. The reporting institution is requested to use its own definition of what constitutes full- and part-time employment in columns (2) and (3).

Items 1a(1) and 1a(2). The functional classification of professional personnel into research and development or other activities should be based on the function in which the person is primarily employed at the institution. For example, a person engaged in both research and development and other activities should be classified in the function in which he spends the greater portion of his time.

Under other activities 1a(2), report professional personnel not primarily employed in research and development as defined above. Examples of such activities are demonstration work, education, and dissemination of scientific information.

1b. *Technicians*—Include all persons employed in positions which involve technical work at a level requiring knowledge of engineering, mathematics, physical science, life science, psychology, or social science comparable to that acquired through formal post-high school training (less than a bachelor's degree), such as that obtained at technical institutes and junior colleges or through equivalent on-the-job training or experience. Some typical job titles include laboratory technician or assistant, physical science aide, engineering aide, statistical aide, draftsman and computer programmer. Exclude craftsmen such as electricians, carpenters, machinists, etc.

1c. *Other Employees*—Include all other persons employed by your organization except those already listed in 1a and 1b. Medical practitioners and other health-professional personnel who spend the greater portion of their time providing patient care, dispensing drugs or services or in diagnosis, etc., should be included in the category.

Item 2—Scientists and Engineers. Report scientists and engineers in the field in which they are primarily employed by the institution and by highest earned degree, January 1970 (see *Classification of Fields*, page 3). Personnel engaged in administration or community service should be classified in the field most closely related to their present employment at the institution.

For the purposes of this survey, earned degrees are classified in four categories as defined below:

(1) Ph.D. or Sc.D. degrees include all such earned degrees. Individuals holding *both* the Ph.D. (or Sc.D.) degree and a first-professional degree, such as the M.D., should be included.

(2) Include individuals whose highest earned degrees are first-professional medical degrees that indicate the completion of the academic requirements based on programs that require at least 2 academic years of previous college work for entrance and require a total of at least 6 academic years of college work for completion. Specifically, include in column 3 first-professional degrees in Medicine (M.D.), Dentistry (D.D.S. or D.M.D.), Veterinary Medicine (D.V.M.), Chiropody or Podiatry (D.S.C. or D.P.), Optometry (O.D.), and Osteopathy (D.O.). Individuals holding both the Ph.D. (or Sc.D.) degree and a first-professional degree, such as the M.D., should be included in line (1) as mentioned in (1) above.

(3) For the purposes of this survey, report all individuals with master's degrees (second-level degrees above the bachelor's degree and below the Ph.D.), with the exception of those who also hold medical doctorates as described below. A person with an M.D., D.D.S., and other first-professional medical doctorate requiring at least 6 academic years of college work for completion should be reported in line (2), even if he also holds a master's degree in the arts or sciences or a second-level professional degree (e.g., Master in Surgery or Master of Science in Dentistry).

(4) Report all individuals whose highest earned degree is the bachelor's degree or a 4- or 5-year first-professional degree, or who have the equivalent in experience, even if they have not earned such a degree.

PERSONNEL DATA

1 to 3 of the survey questionnaire)

1b. *Technicians*—Include all persons employed in positions which involve technical work at a level requiring knowledge of engineering, mathematics, physical science, life science, psychology, or social science comparable to that acquired through formal post-high school training (less than a bachelor's degree), such as that obtained at technical institutes and junior colleges or through equivalent on-the-job training or experience. Some typical job titles include laboratory technician or assistant, physical science aide, engineering aide, statistical aide, draftsman and computer programmer. Exclude craftsmen such as electricians, carpenters, machinists, etc.

1c. *Other Employees*—Include all other persons employed by your organization except those already listed in 1a and 1b. Medical practitioners and other health-professional personnel who spend the greater portion of their time providing patient care, dispensing drugs or services or in diagnosis, etc., should be included in the category.

Item 2—Scientists and Engineers. Report scientists and engineers in the field in which they are primarily employed by the institution and by highest earned degree, January 1970 (see *Classification of Fields*, page 3). Personnel engaged in administration or community service should be classified in the field most closely related to their present employment at the institution.

For the purposes of this survey, earned degrees are classified in four categories as defined below:

(1) Ph.D. or Sc.D. degrees include all such earned degrees. Individuals holding *both* the Ph.D. (or Sc.D.) degree and a first-professional degree, such as the M.D., should be included.

(2) Include individuals whose highest earned degrees are first-professional medical degrees that indicate the completion of the academic requirements based on programs that require at least 2 academic years of previous college work for entrance and require a total of at least 6 academic years of college work for completion. Specifically, include in column 3 first-professional degrees in Medicine (M.D.), Dentistry (D.D.S. or D.M.D.), Veterinary Medicine (D.V.M.), Chiropody or Podiatry (D.S.C. or D.P.), Optometry (O.D.), and Osteopathy (D.O.). Individuals holding both the Ph.D. (or Sc.D.) degree and a first-professional degree, such as the M.D., should be included in line (1) as mentioned in (1) above.

(3) For the purposes of this survey, report all individuals with master's degrees (second-level degrees above the bachelor's degree and below the Ph.D.), with the exception of those who also hold medical doctorates as described below. A person with an M.D., D.D.S., and other first-professional medical doctorate requiring at least 6 academic years of college work for completion should be reported in line (2), even if he also holds a master's degree in the arts or sciences or a second-level professional degree (e.g., Master in Surgery or Master of Science in Dentistry).

(4) Report all individuals whose highest earned degree is the bachelor's degree or a 4- or 5-year first-professional degree, or who have the equivalent in experience, even if they have not earned such a degree.

In column 2, report the number of scientists and engineers primarily engaged in medical and health-related research and development. In column 3, report those scientists and engineers primarily engaged in other types of research and development. In column 4, report scientists and engineers whose primary function is in other scientific and engineering activities. Include such activities as information, administration, etc., but exclude patient care, diagnosis, or dispensing drugs and services. Personnel primarily engaged in these activities should be included in item 1c, as noted above.

Item 3—Technicians. Report technicians by field and function in which primarily employed, October 1973. See instructions in 1b above.

Note that the amount shown in item 1a, column 1, should be the same as that in 2b, column 1, and the amount in 1b, column 1, should be the same as that in 3, column 1.

PART II—FINANCIAL DATA

(Includes items 4 to 7 of the survey questionnaire)

Note: The dollar amounts reported on this form should reflect actual expenditures for the year. All financial data requested should be reported in thousands of dollars; for example, an expenditure of $25,250 should be reported in the appropriate column as $25.

This survey is generally comparable to that conducted by this office in 1970, covering financial expenditures for fiscal year 1969. Where data reported in the current survey differ significantly from those reported in the previous survey, please indicate the reasons for the difference in the space provided for "Remarks" at the end of the questionnaire. Copies of your institution's earlier responses are available upon request.

The financial survey covers the fiscal year beginning on July 1, 1972, and ending June 30, 1973, or your institution's equivalent fiscal year ending in 1973.

Your cooperation in returning the questionnaire by January 31, 1974, will be greatly appreciated.

Information on some items may not be available from records normally maintained by your institution. *Reasonable estimates for such items will be satisfactory.* Where it is not possible to identify expenditures for the year, revenues may be substituted. Enter "O" as an item total (lines 4100, 4300, 4400, etc., are item totals) rather than leave the total blank.

If you have any questions regarding information requested on this form or if you need additional forms, write or telephone Mr. J.G. Huckenpahler at the Universities and Nonprofit Institutions Studies Group (202—282-7790), National Science Foundation, 1800 "G" Street, N.W., Washington, D.C. 20550.

Item 4—Total Expenditures. Report all expenditures of your organization during the 1973 accounting period. These include all expenditures for current operations and administration of the organization; buildings and equipment; and all gifts, grants, contracts, scholarships, etc., made to outside organizations and individuals in the United States and foreign countries, and the administrative and operating expenses associated with such disbursements.

4a. *Current R&D Expenditures*—Include all direct and indirect operating costs incurred for intramural R&D performance. The major relevant costs usually include wages and salaries of all supporting personnel such as technicians, secretaries and other personnel, costs of administration, costs of materials and supplies consumed, service and supporting costs, depreciation, and shares of other overhead expenses. Include the cost of research and development performed by scientists and engineers directly employed by your organization, whether done in the United States or abroad. If your organization performed research and development for others on contract, include the total charged for the work performed in the year covered by the survey. *Exclude R&D contracts subcontracted by your organization to be performed by other organizations.* Also, exclude the gathering of general-purpose data, activities concerned primarily with the dissemination of scientific information.

4b. *Capital R&D Expenditures*—Report all capital expenditures during the year covered by the survey for building, fixtures, and depreciable equipment used in research and development performed within your organization. Include only costs which are normally chargeable to fixed asset accounts for which depreciation accounts are ordinarily maintained; *include* major alterations, capitalized repairs and improvements; *include* expenditures made during the year for establishments under construction but not yet in operation. Do not include capital expenditures made by owners of property rented or leased by you, including the Federal Government. *Exclude* cost of land and cost of maintenance and repair charged as current operating expense. Also *exclude* costs of government-owned structures or equipment.

4c. *All Other Expenditures*—Include all other expenditures by your organization except those already listed in 4a and 4b. Include in this category extramural R&D expenditures.

In column 2, please indicate the amounts allocated to medical and health-related purposes. Where exact figures are not available, please make estimates.

Item 5—Current Expenditures for Research and Development, by Source of Funds, 1973. Source of funds refers to immediate sources rather than ultimate sources of funds concerned. For example, funds received by your institution from a foundation should be reported under that source, even if industry was the original source of some or all of the foundation's funds.

Under *Federal Government* (item 5a) include grants and contracts earmarked for research and development by all agencies of the Federal Government. *Exclude R&D contracts subcontracted by your institution to be performed by other organizations.*

Under *State government* (item 5b) include funds designated for R&D by the State government and its agencies.

Under *local government* (item 5c) include funds designated for R&D by county, municipal, or other local governments and their agencies.

Under *Foundations and voluntary health agencies* (item 5d) include grants specified for research and development. Funds from foundations which are affiliated with or grant solely to your institution should be included under *Institution's own funds* (item 5f). Funds specifically designated for R&D and derived from a health agency that is a unit of a State or local government should be reported under *State* or *local government*. Funds from professional societies such as the American Medical Association and the American Dental Association should be reported under *Other sources* (item 5g).

Under *Industry* (including trade associations) (item 5e) include all grants and contracts allocated to R&D by profitmaking organizations, whether engaged in production, distribution, research, service, or other activities. Do not include grants and contracts from nonprofit foundations financed by industry, which should be reported under *Foundations*.

Under *Institution's own funds* (item 5f) include earnings from investments, disbursements from capital, membership dues and assessments, liquidation of assets, unrestricted contributions and gifts from private individuals, and earnings from miscellaneous sources such as publication sales, admissions, advertising, etc.

Under *Other sources* (item 5g) report any additional funds received from outside sources other than those already noted, and which were earmarked for R&D *by the source*. Examples include gifts, grants, or contracts received from private individuals or professional societies, and designated for R&D by them.

In column 2, report the amount from each source which was allocated to medical and health-related

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**Item 6.—
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ANCIAL DATA

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personnel such as technicians, secretaries and other personnel, costs of administration, costs of materials and supplies consumed, service and supporting costs, depreciation, and shares of other overhead expenses. Include the cost of research and development performed by scientists and engineers directly employed by your organization, whether done in the United States or abroad. If your organization performed research and development for others on contract, include the total charged for the work performed in the year covered by the survey. *Exclude R&D contracts subcontracted by your organization to be performed by other organizations.* Also, exclude the gathering of general-purpose data, activities concerned primarily with the dissemination of scientific information.

4b. *Capital R&D Expenditures*—Report all capital expenditures during the year covered by the survey for building, fixtures, and depreciable equipment used in research and development performed within your organization. Include only costs which are normally chargeable to fixed asset accounts for which depreciation accounts are ordinarily maintained; *include* major alterations, capitalized repairs and improvements; *include* expenditures made during the year for establishments under construction but not yet in operation. Do not include capital expenditures made by owners of property rented or leased by you, including the Federal Government. *Exclude* cost of land and cost of maintenance and repair charged as current operating expense. Also *exclude* costs of government-owned structures or equipment.

4c. *All Other Expenditures*—Include all other expenditures by your organization except those already listed in 4a and 4b. Include in this category extramural R&D expenditures.

In column 2, please indicate the amounts allocated to medical and health-related purposes. Where exact figures are not available, please make estimates.

Item 5—Current Expenditures for Research and Development, by Source of Funds, 1973. Source of funds refers to immediate sources rather than ultimate sources of funds concerned. For example, funds received by your institution from a foundation should be reported under that source, even if industry was the original source of some or all of the foundation's funds.

Under *Federal Government* (item 5a) include grants and contracts earmarked for research and development by all agencies of the Federal Government. *Exclude R&D contracts subcontracted by your institution to be performed by other organizations.*

Under *State government* (item 5b) include funds designated for R&D by the State government and its agencies.

Under *local government* (item 5c) include funds designated for R&D by county, municipal, or other local governments and their agencies.

Under *Foundations and voluntary health agencies* (item 5d) include grants specified for research and development. Funds from foundations which are affiliated with or grant solely to your institution should be included under *Institution's own funds* (item 5f). Funds specifically designated for R&D and derived from a health agency that is a unit of a State or local government should be reported under *State* or *local government*. Funds from professional societies such as the American Medical Association and the American Dental Association should be reported under *Other sources* (item 5g).

Under *Industry* (including trade associations) (item 5e) include all grants and contracts allocated to R&D by profitmaking organizations, whether engaged in production, distribution, research, service, or other activities. Do not include grants and contracts from nonprofit foundations financed by industry, which should be reported under *Foundations.*

Under *Institution's own funds* (item 5f) include earnings from investments, disbursements from capital, membership dues and assessments, liquidation of assets, unrestricted contributions and gifts from private individuals, and earnings from miscellaneous sources such as publication sales, admissions, advertising, etc.

Under *Other sources* (item 5g) report any additional funds received from outside sources other than those already noted, and which were earmarked for R&D *by the source*. Examples include gifts, grants, or contracts received from private individuals or professional societies, and designated for R&D by them.

In column 2, report the amount from each source which was allocated to medical and health-related research and development (see page 4 of these instructions for definition). The total in each column of item 5h should equal the figures reported in 1a.

Item 6.—Total and Federally Financed Current Expenditures for Intramural Research and Development, by Type of R&D Activity, 1972-73. Types of R&D activity for which separate data are requested (basic research, applied research, and development) are defined on page 3 of the instructions. It is recognized that your records may not yield exact figures on amounts expended for each of the three categories. Therefore, percentage estimates of the breakdown will be satisfactory. The "100 percent" in item 6d refers to the total and federally funded R&D expenditures reported in 5h and 5a.

Item 7.—Total and Federally Financed Current Expenditures for Intramural Research and Development, by Field of Science, 1972-73. Include indirect costs.

In column 1, include all current expenditures for total separately budgeted R&D, by field of science as shown on page 3, whether such expenditures derive from outside sources or your institution's own funds, and whether from contracts, grants, gifts, endowments (income or principal), State and local government appropriations, or other sources, provided the funds were separately budgeted for R&D and were expended in the fiscal year 1972-73. Also include any indirect costs reimbursed or reimbursable by outside sponsors of R&D projects. Report expenditures by field of science in accordance with *Classification of Fields* on pages 3 and 4.

In column 2, distribute the medical and health-related R&D expenditures reported in item 5h, column 2, by field of science.

In column 3, classify total separately budgeted research and development financed by the Federal Government, by field of science.

Totals in item 7i (columns 1 and 3) should equal 5h and 5a.

In column 4, distribute the federally financed medical and health-related R&D expenditures reported in item 5a, column 2, by field of science.

APPENDIX D

List of Federally Funded Research and Development Centers Administered by Nonprofit Organizations

Department of Defense

- Institute for Defense Analyses
- Aerospace Corporation
- Analytic Services, Inc.
- MITRE Corporation
- RAND Corporation

Atomic Energy Commission

- Atomic Bomb Casualty Commission
- Battelle Memorial Laboratories, Pacific Northwest Division

Other Science Resources Publications

REPORTS	NSF Number	Price
Expenditures for Scientific and Engineering Activities at Universities and Colleges, Fiscal Year 1973	75-315	In press
Research and Development in Industry, 1972	75-314	In press
Characteristics of Doctoral Scientists and Engineers in the United States, 1973	75-312	In press
The 1972 Scientist and Engineer Population Redefined. Vol. I, Demographic, Educational, and Professional Characteristics	75-313	In press
Reviews of Data on Science Resources, No. 23, "R&D Expenditures of State Public Institutions, Fiscal Year 1973"	75-311	$0.35
Work Activities of Employed Doctoral Scientists and Engineers in the U.S. Labor Force, July 1973	75-310	In press
Research and Development in State Government Agencies, Fiscal Years 1972 and 1973	75-303	$1.80
Young and Senior Science and Engineering Faculty, 1974: Support, Research Participation, and Tenure	75-302	$1.70
Projections of Science and Engineering Doctorate Supply and Utilization, 1980 and 1985	75-301	$1.30
Graduate Science Education: Student Support and Postdoctorals, Fall 1973	74-318	In press
Detailed Statistical Tables. Graduate Science Education: Student Support and Postdoctorals, Fall 1973	74-318-A	——
Reviews of Data on Science Resources, No. 22, "The Federal Role in the Support of Graduate Science and Engineering Education"	74-317	$0.25

An Analysis of Federal R&D Funding by Fun
Fiscal Years 1969-1975 ....
Immigrant Scientists and Engineers in the United States. A Study of Characteristics
Attitudes ....
Scientific Human Resources: Profiles and Issues ....
Papers and Proceedings of a Colloquium on Research and Development and Economic Growth/Productivity ....

HIGHLIGHTS

"National Sample of Scientists and Engineers
Changes in Employment, 1970-72 and 1972-74" ....
"The 1972 Scientist and Engineer Population Redefined" ....
"Employment of Life Scientists Up in 1974—Accounts for Nearly all Growth of Scientist and Engineers in Doctorate-Granting Institutions" ....
"Imigration of Scientists and Engineers Drops Sharply in FY 1973; Physician Inflow Still Near FY 1972 Peak" ....
"Selected Characteristics of Five Engineering and Scientific Occupational Groups, 1972"
"NSF Forecasts Rise in Company-Funded Rese
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Population Educa- teristics	75-313	In press
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ent Support	74-318	In press
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rces, No. 22, of Graduate on"	74-317	$0.25

An Analysis of Federal R&D Funding by Function, Fiscal Years 1969-1975	74-313	$2.25
Immigrant Scientists and Engineers in the United States, A Study of Characteristics and Attitudes	73-302	$2.50
Scientific Human Resources: Profiles and Issues	72-304	$0.25
Papers and Proceedings of a Colloquium on Research and Development and Economic Growth/Productivity	72-303	$0.75

HIGHLIGHTS

"National Sample of Scientists and Engineers: Changes in Employment, 1970-72 and 1972-74"	75-309	——
"The 1972 Scientist and Engineer Population Redefined"	75-305	——
"Employment of Life Scientists Up in 1974—Accounts for Nearly all Growth of Scientists and Engineers in Doctorate-Granting Institutions"	74-315	——
"Imigration of Scientists and Engineers Drops Sharply in FY 1973; Physician Inflow Still Near FY 1972 Peak"	74-302	——
"Selected Characteristics of Five Engineering and and Scientific Occupational Groups, 1972" ...	73-306	——
"NSF Forecasts Rise in Company-Funded Research and Development and R&D Employment"	73-301	——